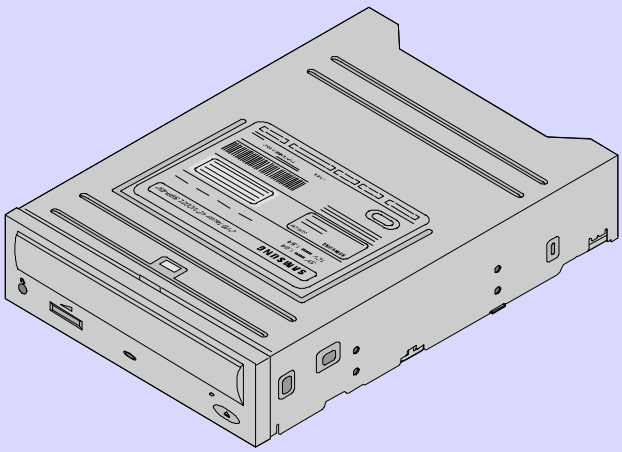
SAMSUNG

DVD-ROM DRIVE
SDR-430

DVD-ROM Service Manual

DVD-ROM DRIVE



CONTENTS

1. Precautions
2. Specifications
3. General information
   - 3-1. External part name
   - 3-2. Cricuit description
   - 3-3. Troubleshooting
   - 3-4. IC internal block and IC pin option
4. Disassembly and assembly
5. Alignment and adjustment
6. Exploded views and prats
7. Cricuit Part list
8. Block diagram
9. Electrical board
10. Schematic diagrams

ELECTRONICS

¨Ï Samsung Electronics Co., Ltd.October.1998

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1.Precautions

1 - 1. General items

1) Be careful not to have eyes or a part of body touch with laser diode at repair because this product uses laser diode.
2) Do not disassemble Pick-up at repair. If the laser diode is bad, replace the entire Pick-up.
3) Keep away from TV or other electrical units at repair to prevent a influence from surrounding units.
4) If you want to replace the parts during repair, be sure to plug off power cable before replacement.
5) If you insert a disc into CD player, beg sure to load it correctly.
6) Because this unit can't be used by itself, surely mount it on PC(pentium or more) and check the operations in use of private device drive floppy diskettd. Refer to Instruction manual.
7) This unit has many parts with features related to safety and especially, for essential parts, the importance is indicated on circuit diagram and part list. Be certain to use the parts with same specifications at replacing these parts.

1 - 2. Electricity sensing device

Some semiconductor units may be damaged easily by electricity. These elements are called as electricity sensing device(ESD) in general. For example, integrated circuit, field effect transister, semiconduct chip.
The following methods have to be used to reduce the accident of element damage generated by electricity.

1) Emit all electric charges in your body through contact with earthing materail at once before handling a semiconductor factor or device including it.
   In other way, make use of commercial wristlet against electRIC1ty. It shall be detached before power impression to the unit on testing because of shock.
2) After detaching an electrical device including ESD, it shall be placed on conductive urface such as aluminium to prevent the charge acummulation and unit exposure.
3) Utilize only the soldering iron with earthed end for ESD soldering or release.
4) Make use of only anti-static soldering release unit. A soldering release unit not to be classified as anti-static may generate the enough charge to damage ESD unit.
5) Never use a Freon-propelling chemical product. It may generate the enough charge to damage ESD.
6) Untill installing ESD unit for replacement, never it from protection package.(Most of ESD unit for replacement have lead composed of package shorted electrically by conductive foam, aluminium or similar conductive material.
7) Contact with shassis including ESD or protection material in circuit parts hust before detaching the protection meterial from lead of ESD unit for replacement.

   NOTE: Be sure to avoid the power impression to the shassis or circuit and observe the safey instruction

8) Minimize the body action at handling an unpacked ESD unit for replacement.
   (Otherwise, an unconscious action, so to speak, friction between clothes or foot lifting from carpet floor may generate the enough charge to damage ESD unit.)

1 - 3. Safety instructions

1) Read all safety and operational manuals before operating this product.
2) Keep the safety and operational manuals for future reference.
3) Observe all precations and operational instuctions in or on the suface of this product.
4) Follow all operation and maintenance cautions.
5) Be sure to plug off the power cable before cleaning. Use a dry cloh to clean a dusty cover of cabinet instead of Instead of liquid or aersol cleaner.
6) Never use a attachment not to be recommended by this company. It may result in danger and damage.
7) Never use this product around water such as bathtub, washbasin, laundry machine, swimming pool or lakeside.
8) Never place this product on bed, sofa or around radiator and heater.
9) Power : Utilize the only power displayed on lebel If the power type can't be checked, call to dealer of Korea Electricity, Co, Ltd. Refer to operate this product by battery or other power.
10) Lightning : Plug off the power cable for product protection during thunder and lightning flashes or this product is unused for a long time.
11) Overload: Be careful that the wall outlet and expanded cord is overloaded due to danger of fire and electric shock.
12) Never insert a substance or liquid into this prouct. It may cause fire or shorck by contact with voltage point or short.
13) Part replacement : The service engineer has to use the parts of same specification at replacement. Otherwire, Otherwire, fire, shock or other dangers may be occurred.
14) Safety check : Be sure to perform the safety check at service or repair completion.

Importance :
This product includes special impotrant parts on safety. These parts are indicated ⚠ by on schematic diagram.
At replacement of these parts, use the parts of same specification due to shock, fire or other dangers.
Never transform the original design without permission of this company.

1 - 4. Earthing cautions at handling Pick-up

Because the laser diode in optical Pick-up is subject to get out of order due to the potential difference occurring by electricity load charged in clothes or bodies, observe the following eathing items at handling.

1) Body earthing at repair : Be sure to wear a wrist strip with one side earthed.(Impedance : Below 10^4Ù). It removes the electicity formed in body.

2) Wire table earthing : Put the earthed conductive Plate(Impedance : Below 10^4Ù)such as copper plate on work table.

3) Cautions for clothes : Do not have any clothes is destroyed easily.
4) FPCB operation be careful to handle FPCB because it may be damaged easily.

2. Specifications

The specification and design may be altered without previous notice and the below weight and dimensions are approximate values.

General option	Drive type		Computer built-in
	Power consumption		Dc + 5V, 1A DC + 12V, 1.5A(MAX)
	Weight		930g
	Dimension		149mm(W)¡¿200mm(D)¡¿415mm(H)
	Allowable operational temperature		+5¡É ~ +45¡É
	Allowable operational humidity:		8% ~ 80%
Electrical feature	Standard mode		CD-ROM Mode 1,2
	Interface		ATAPI BUS (IDE)
	Data transfer rate		CD-ROM:4,800Kbyte/sec,DVD-ROM:6,480Kbyte/sec
	ACCESS TIME	CD-ROM	1/3 stoke Below : 110ms
			full stoke Below : 200ms
		CD-ROM	1/3 stoke Below : 130ms
			full stoke Below : 200ms
	Buffer capacity		512KB
	Error ratio	CD-ROM	Mode 1 : Below 10^{-12}
			Mode 1 : Below 10^{-9}
		DVD-ROM	Below 10^{-15}
	Frequency response		20Hz to 2KHz : Below ¡¾ 3dB
	Sign al to noise ratio		LINE OUT over : 75dB
			H/PHONE over : 65dB
	Distortion factor		Below 0.15% (1KHz)
	Signal output level		LINE OUT : 0.7Vrms ¡¾ 20%
			H/PHONE : 0.6Vrms ¡¾ 20%
	Lase		Semiconductor laser

4. Disassembly and assembly

4 - 1. Exterior and PCB disassembly

4 - 1 - 1 Door - tray

1) Supply power to open the tray ❷ in direction of arrow "A"
2) Lift up the door ❶ in direction of arrow "B"
3) Close the tray ❷ and power off.

Reference: If the tray ❷ doesn't open, push the clip ❸ into specified hole shown in detailed figure to open it compulsorily.

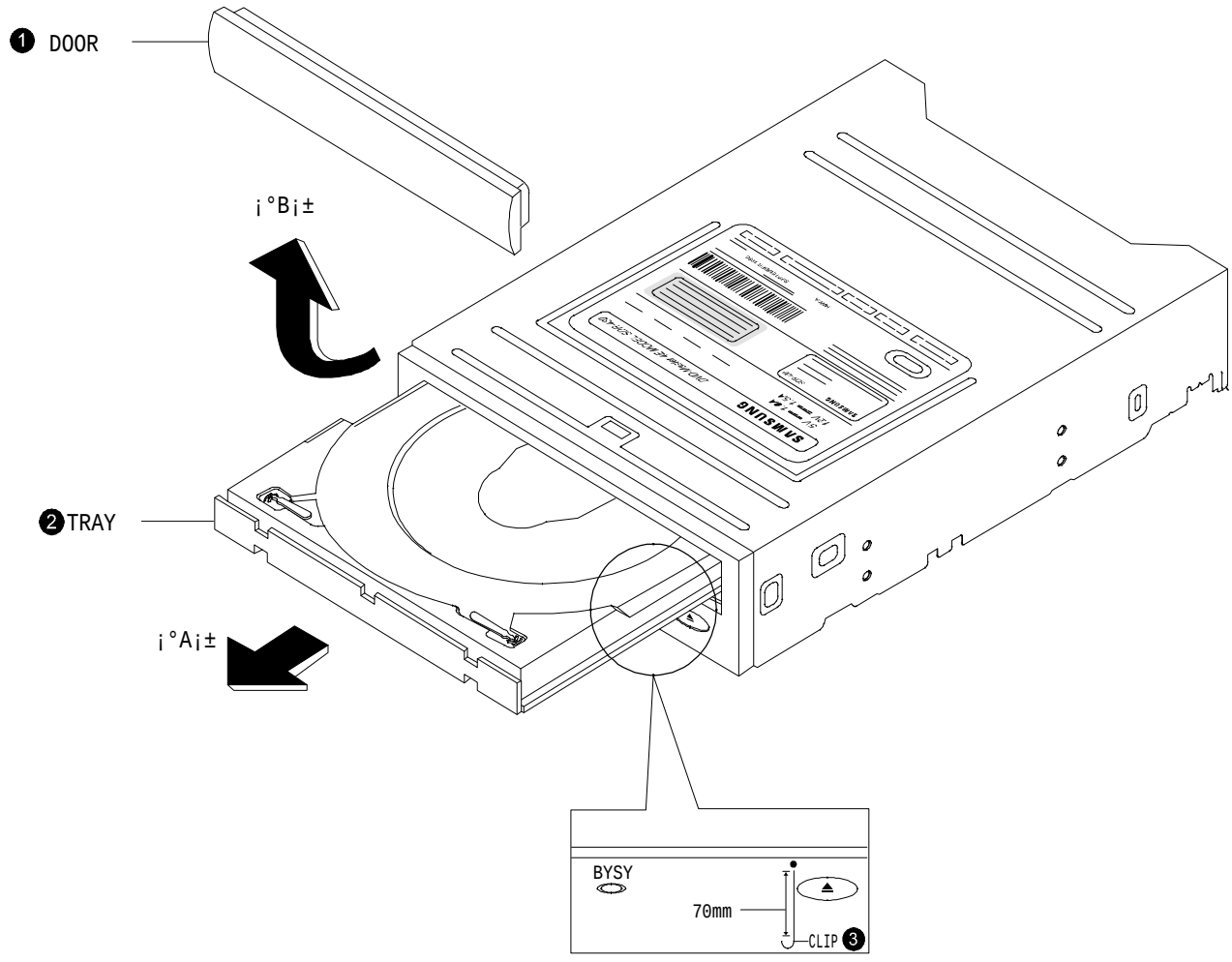


Figure 4 - 1 Door tray

4-1-2 Panel front

1) Remove 5 hooks ❶
2) Take out the panel-front ❷ forward.

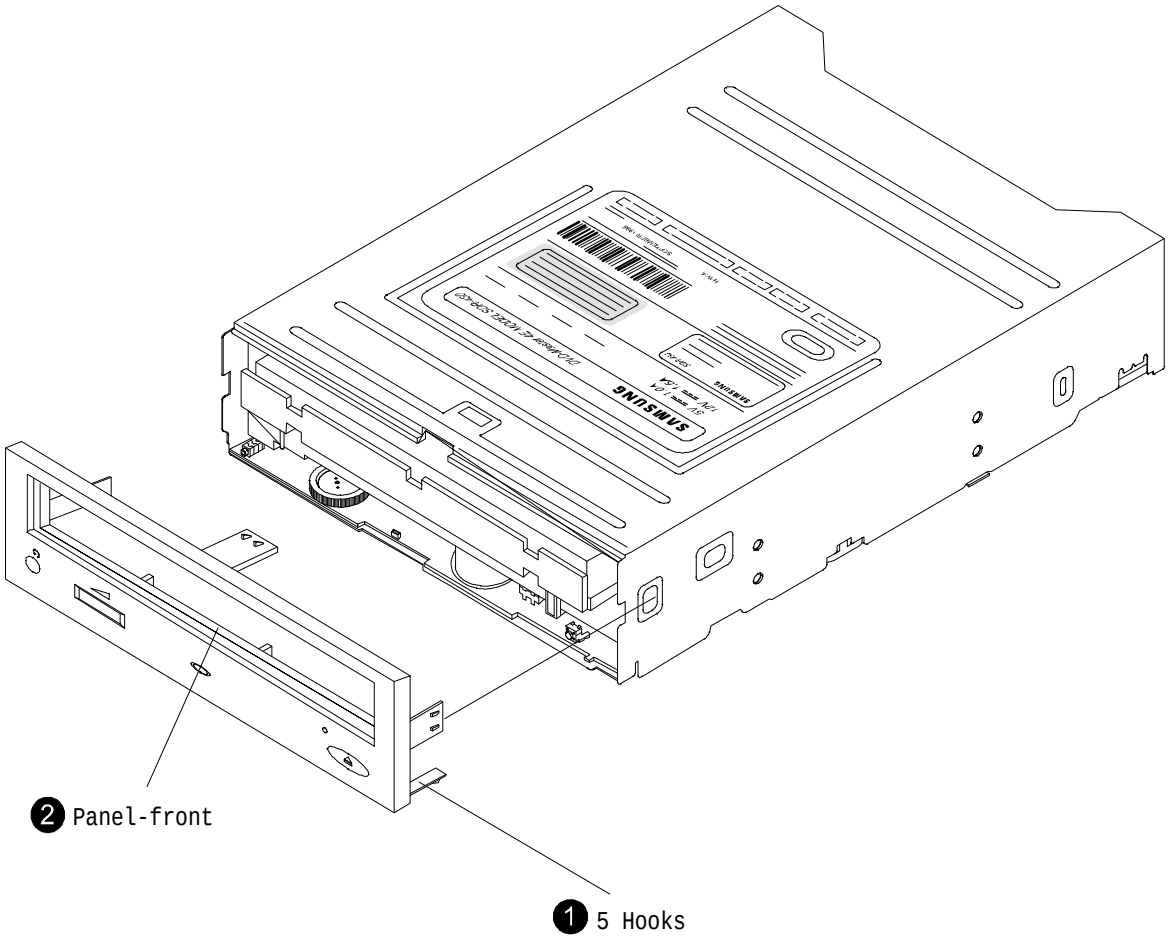


Figure 4-2 Panel-front

4 - 1 - 3 Top - cabinet

1) Remove 4 screws ❶ on the bottom
2) Lift up the top-cabinet ❷

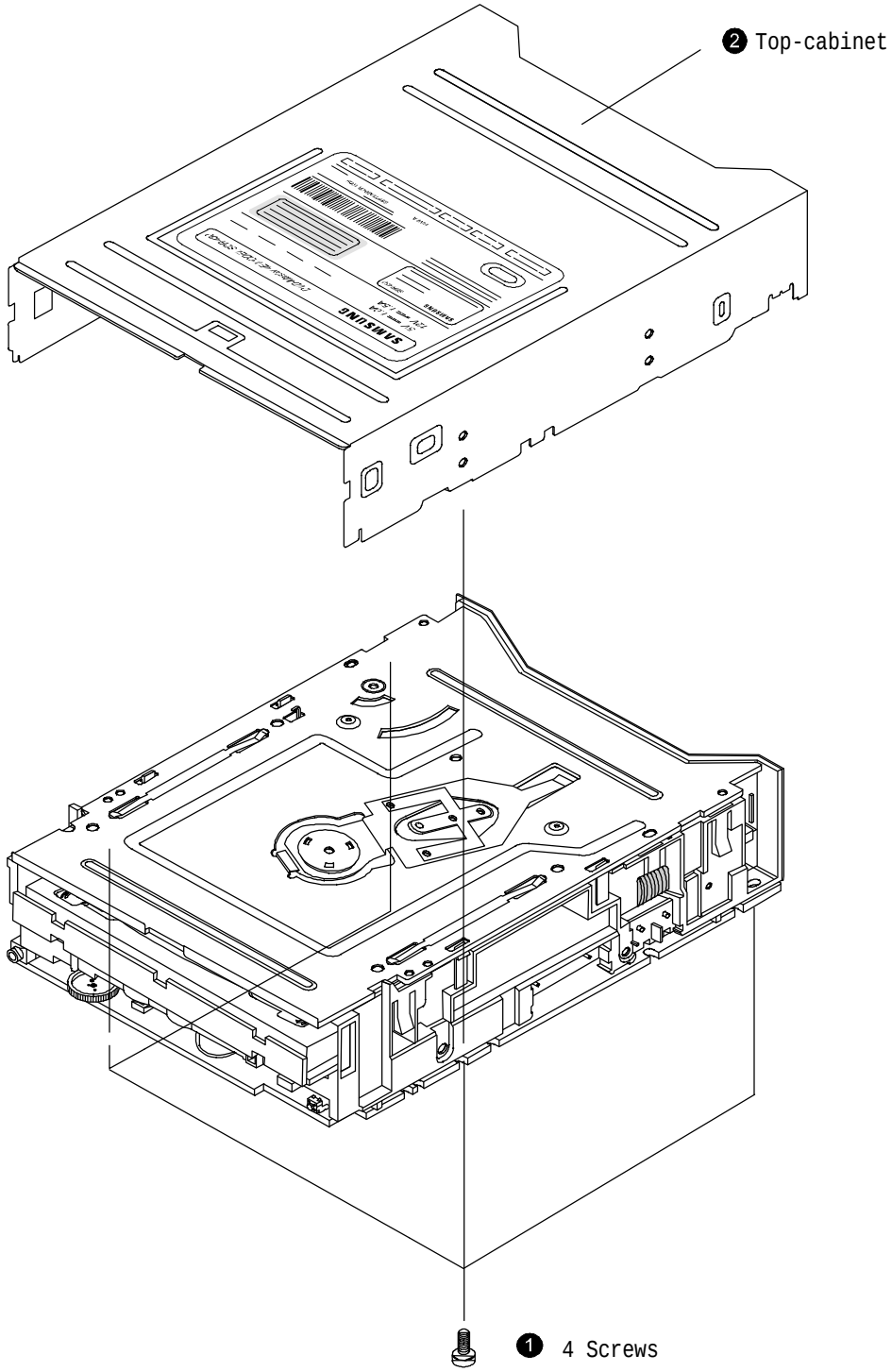


Figure 4 - 3 Top - cabinet

4-1-4 Ass'y-frame Low

1) Lift up the ass'y frame low ❷

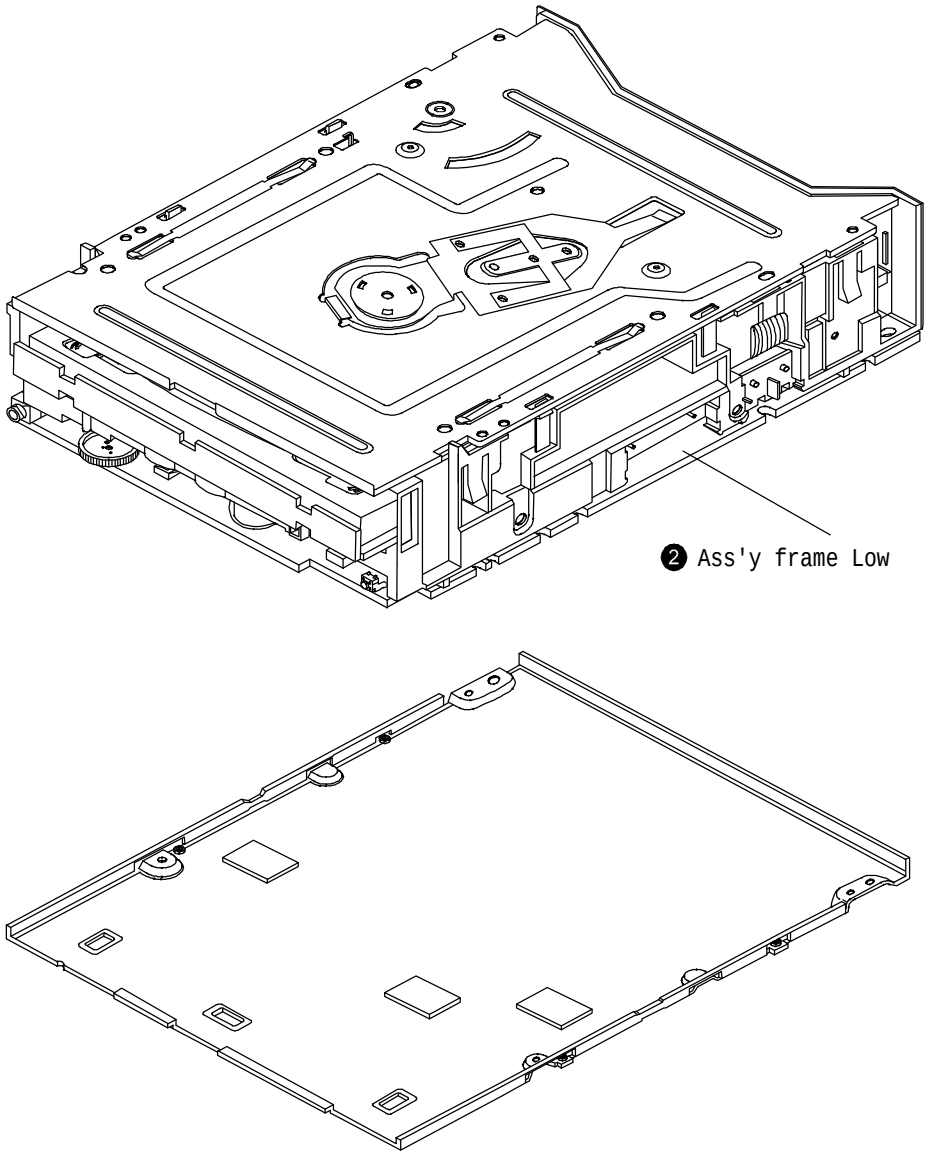


Figure 4-4 Ass'y-frame Low

4 - 1 - 5 MAIN - PCB

1) Remove 4 hooks ❶ for PCB fixing in deck.
2) Disassemble the MAIN-PCB ❷
3) Disassemble the pick up FPC ❸ in PCB.
4) Disassemble the motor wire ❹ in PCB.

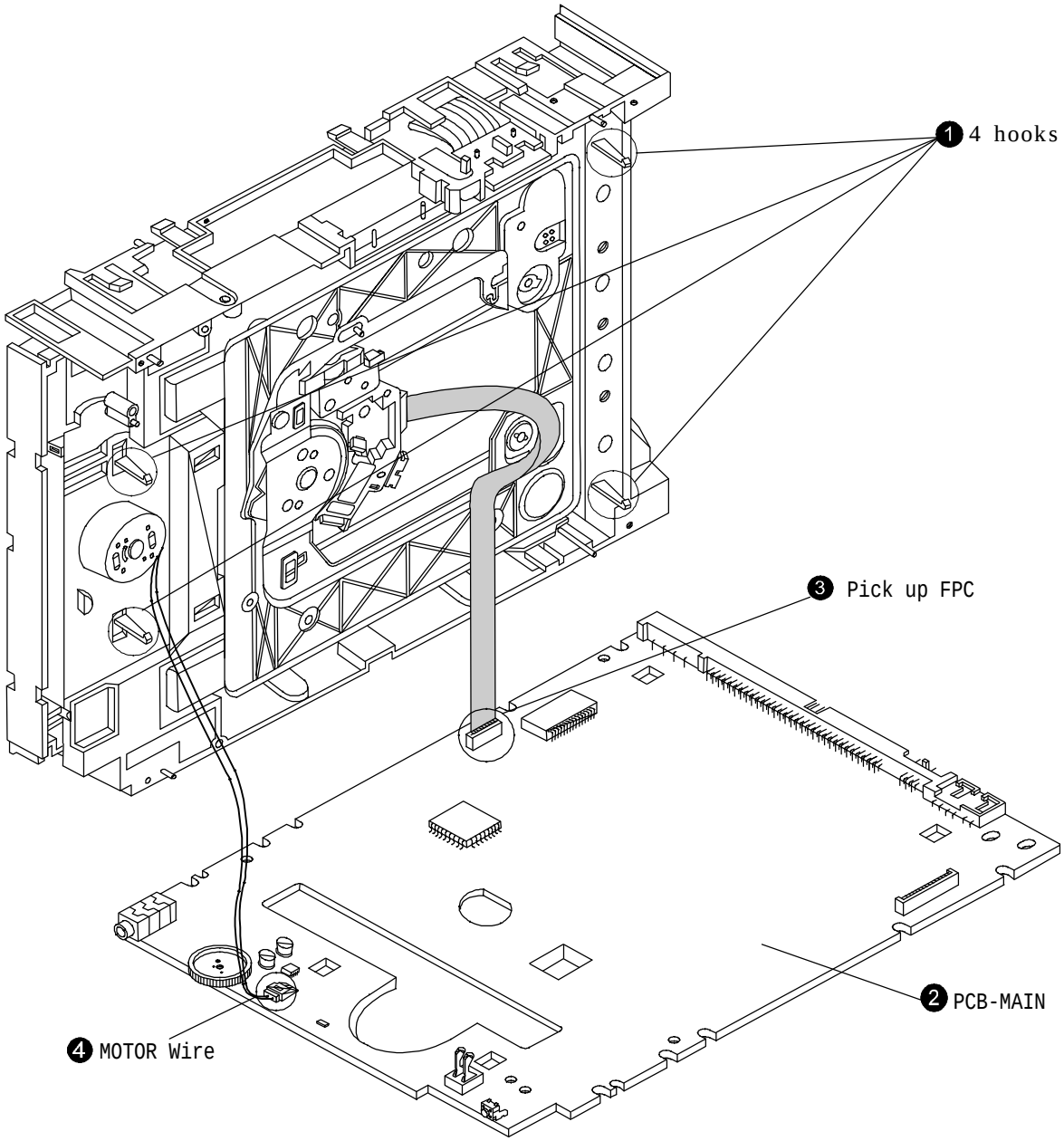


Figure 4 - 5 Disassembly connector

4 - 3. Deck disassembly

4 - 3 - 1 Tray, Clamper

1) Remove 4 screws ❶
2) Remove 4 hooks ❸
3) Lift up the ass'y clamper ❷
4) Lit up the tray ❹

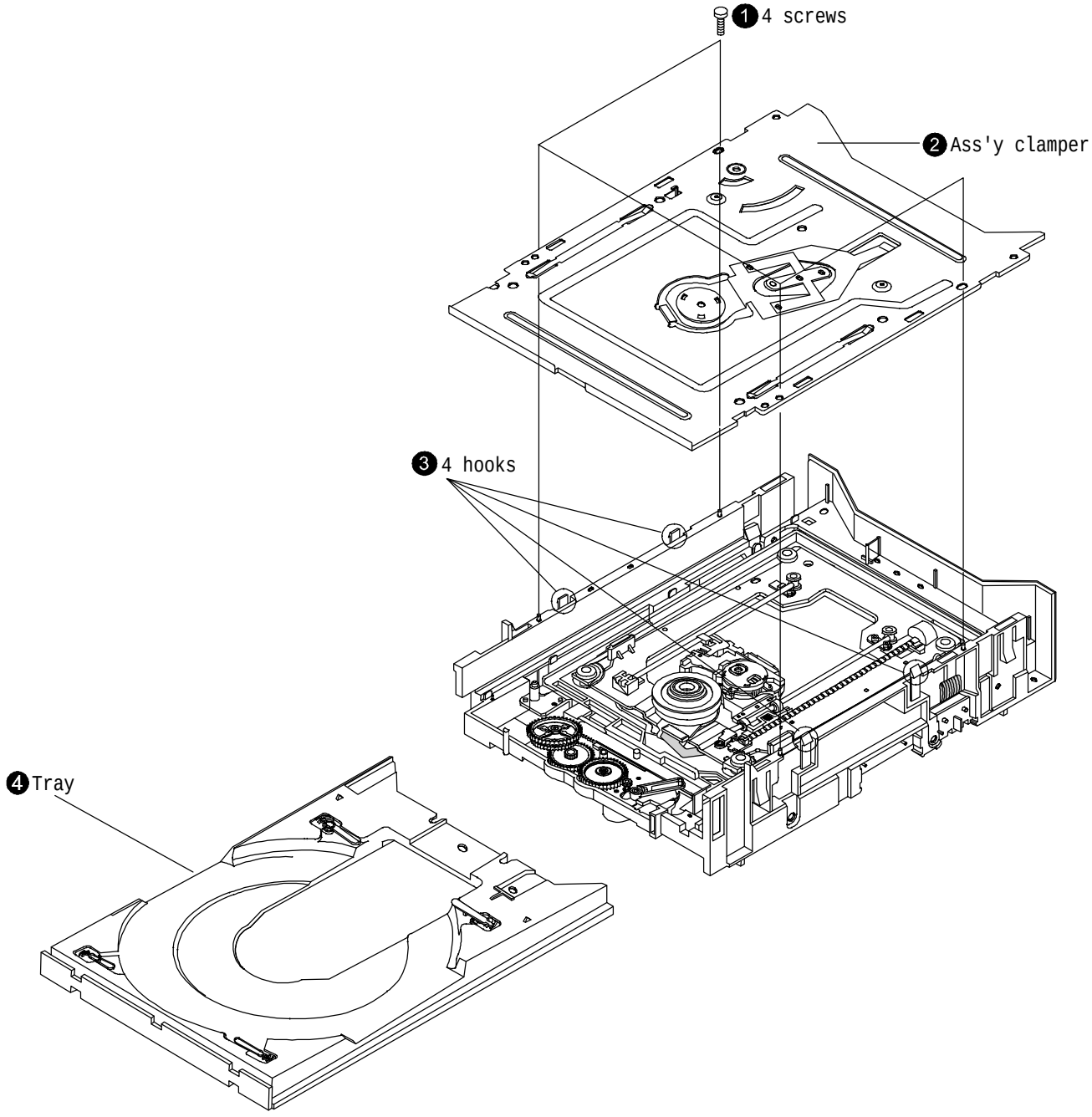


Figure 4 - 6 Tray

4 - 3 - 2 Ass'y - Deck DVD

1) Move the sli❶ cam in left direction.
2) Remove the HOLDER FPC ❷ and disassemble the DECK FPC.
3) Disassemble the ass'y-deck DVD ❹ in arrow "B" direction with pushing the 2hooks ❸ in direction of arrow "A"

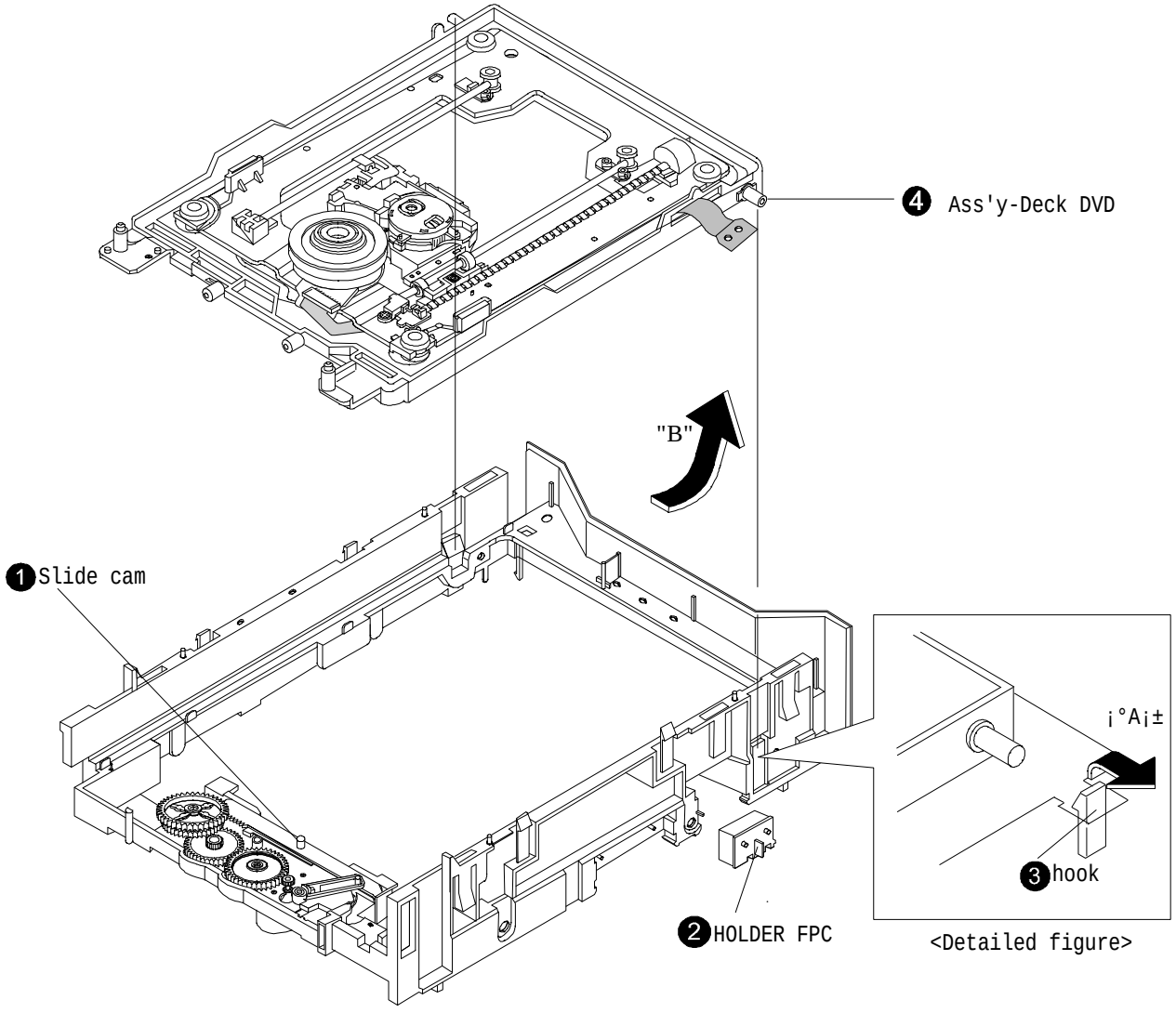
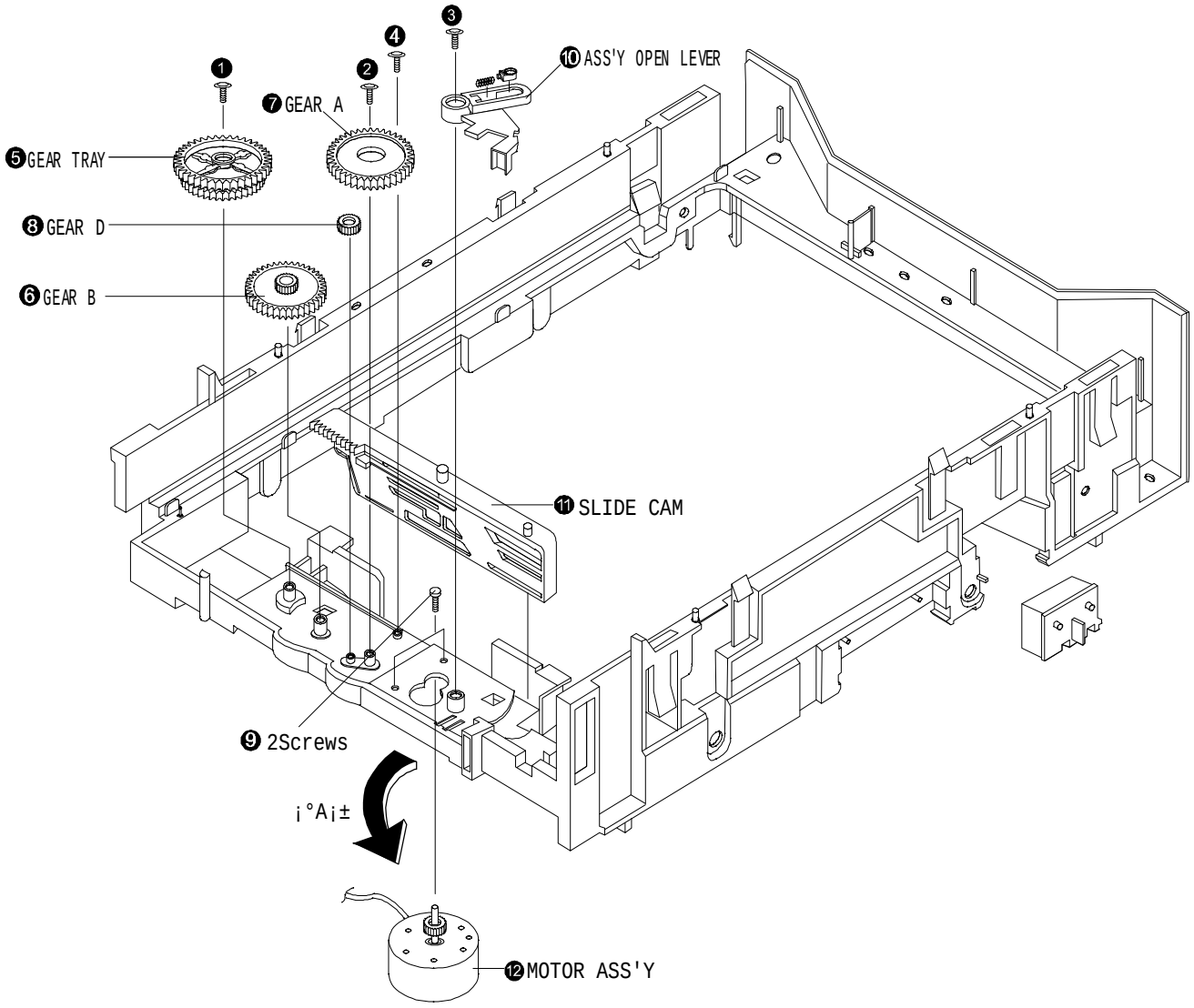


Figure 4 - 7 Ass'y - Deck DVD

4-3-3 Chassis-main individual materials

1) Remove screw ❶ , and lift up the GEAR TRAY ❺
2) Lift up the GEAR B ❻
3) Remove screw ❷, and lift up the GEAR A ❼ , GEAR D ❽
4) Remove screw ❸, and lift up the ASSS'Y OPEN LEVER ❿
5) Remove screw ❹, and lift up the SLIDE CAM ⓫
6) Remove 2 screws ❾, and remove the MOTOR ASS'Y ⓬ in "A" direction



¢Ä Assemblingthe motor and pulley: The height of pulley shall be same as the endd of motor shaft.

Figure 4-8 Chassis-main individual materials

4-3-4 Ass'y-deck

1) Remove 4 screws ❶
2) Lift up the ass'y-deck ❷
3) Remove the pick-up FPC ❸ in "A"

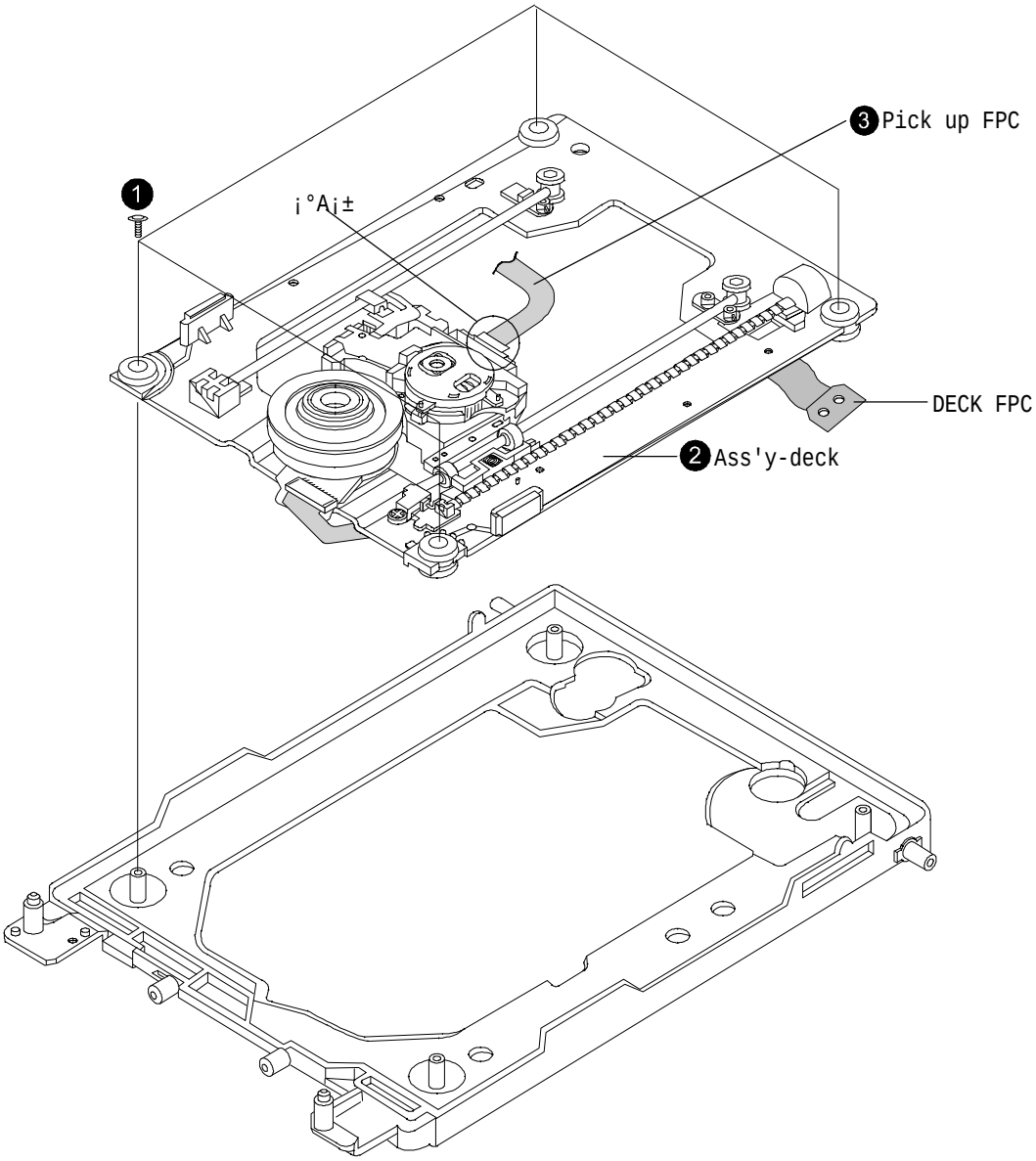


Figure 4-9 Ass'y-deck

4 - 3 - 5 Ass'y - deck individual materials

1) Remove 4 dampers ❶
2) Rotate 180¡£ the SHAFT COVER ❷ in CCW direction.
3) Lift up the ass'y ❹
4) Remove 2 screws ❺, and remove the 2 CAMs ❻, and lift up P/U ❼
5) Remove 3 screws ❽, and removev the MOTOR SPINDLE ❿, and disassemble the DECK-FPC ❾
6) Remove soldering "A",¡°B¡± ❾ in deck-FPC, and remove the S?W ⓳
7) Remove the DECK FPC ❾
8) Remove 4 screws ⓫, and disassemble the HOLDER MOTOR ⓬ in the STEP MOTOR ⓭ in "C" direction
9) Remove 1 screw ⓮ , and disassemble the spring plate ⓱
10) Remove the shaft P/U ❸ in "D"direction, and remove 1 screw ⓯,and disassemble the ass'y slide step ⓰
11) Remove 2 hooks in ASS'Y SLIDE STEP, and remove the slide step ⓲

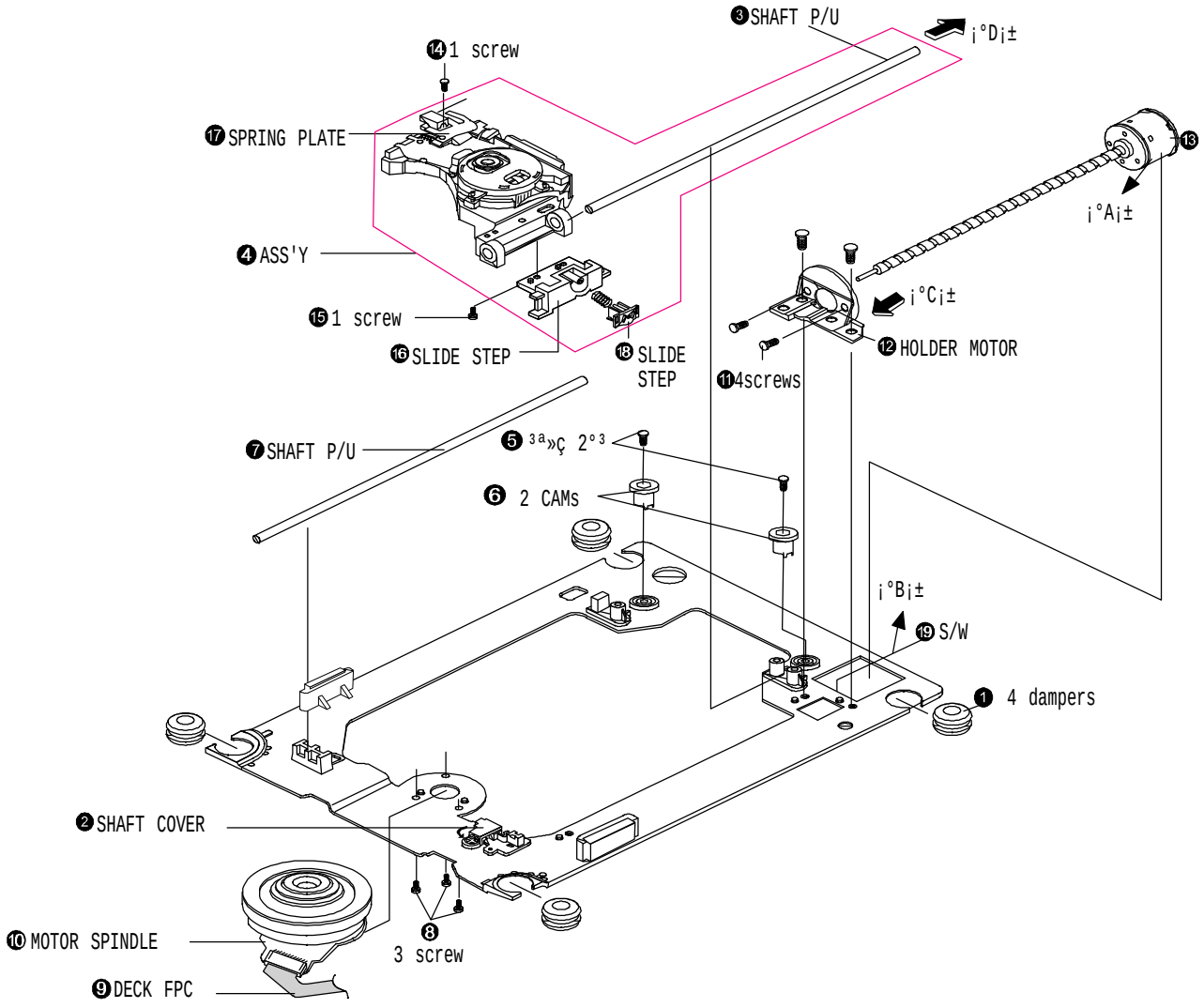


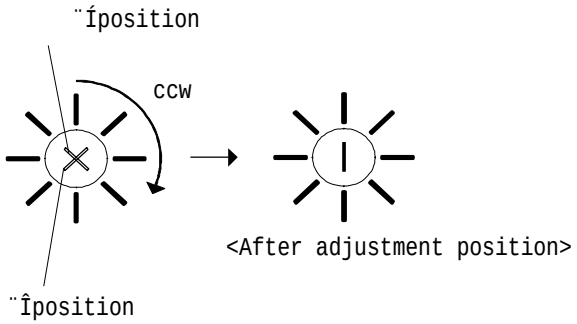
Figure 4 - 10 Ass'y - deck individual materials

5. PLL ADJUSTMENT

5 - 1. PLL adjustment(FOR DVD)

1) Insert DVD disk, make it full stroke on CDT. Making use of SVR1, and then turn it CW with athe controller. Next turn VR CCW at the point ¨Í of stoping stroke. Again check up the point ¨Î of stoping stroke VR ¨Î located between point ¨Í and ¨Î. VR is lied halfway between two point.

ex)



<MAIN - PCB: operational position diagram>

3. General information

3 - 1. Circuit description

3-1-1. Front

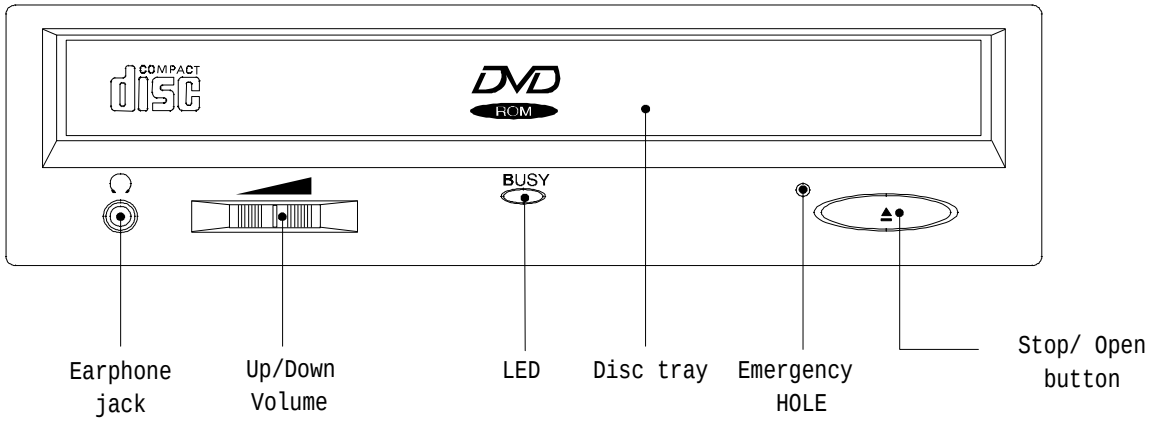


Figure 3-1

3-1-2. Rear

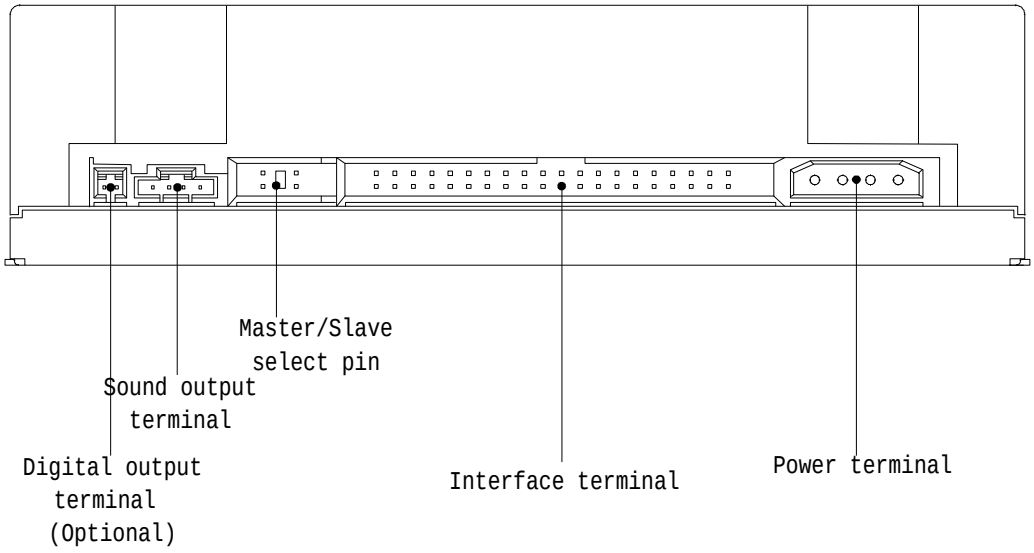


Figure 3-2

3 - 2. Circuit description

3 - 2 - 1. RF

3 - 2 - 1(A) RIC1(TA1293F)

RIC1(TA1293F)is used in combination with TC 9453F as bipolar IC developed for CD/DVD RF signal system. In main, it receives the pick - up output converted into I/V and performs DVD waveform equ - alization(EQ), CD equalization(EQ), astigmatic focus error signal generation, 1 - beam tracking error signal generation(by DPD method), 3 - beam tracking error signal generation FE TE RF GAIN adjutm - ent and laser power control, etc.

1) Reference potentiometer
RIC1 selects a single power method and from pick - up input singnal terminl works on the basis VrA of 2.1.V.

2) CD/DVD-RF signal system : RICL(TA1293F)
Figure 3 - 3 shows the flow of RF signal generated in pick - up.

¡Ü EQ control parameter

1. EGF(58pin) : Change the peak frequency with EQ frequency features.
(Convert PWM signal, (C9453F(168 - pin) into DC via low - pass fiter and supply it.)
2. EGF(57pin) : Change the boost of EQ frequency features.
3. VRCK(17pin) : Input the base clock and link the peak frequency witt it.
4. EQD(24pin) : Change the group delay characteristics with EQ frequency features.

CD/DVD play signal is equalized according to the above control parameter setting and output to RFD(45pin) and this signal is transferred to TC9453F and detected as digital signal.

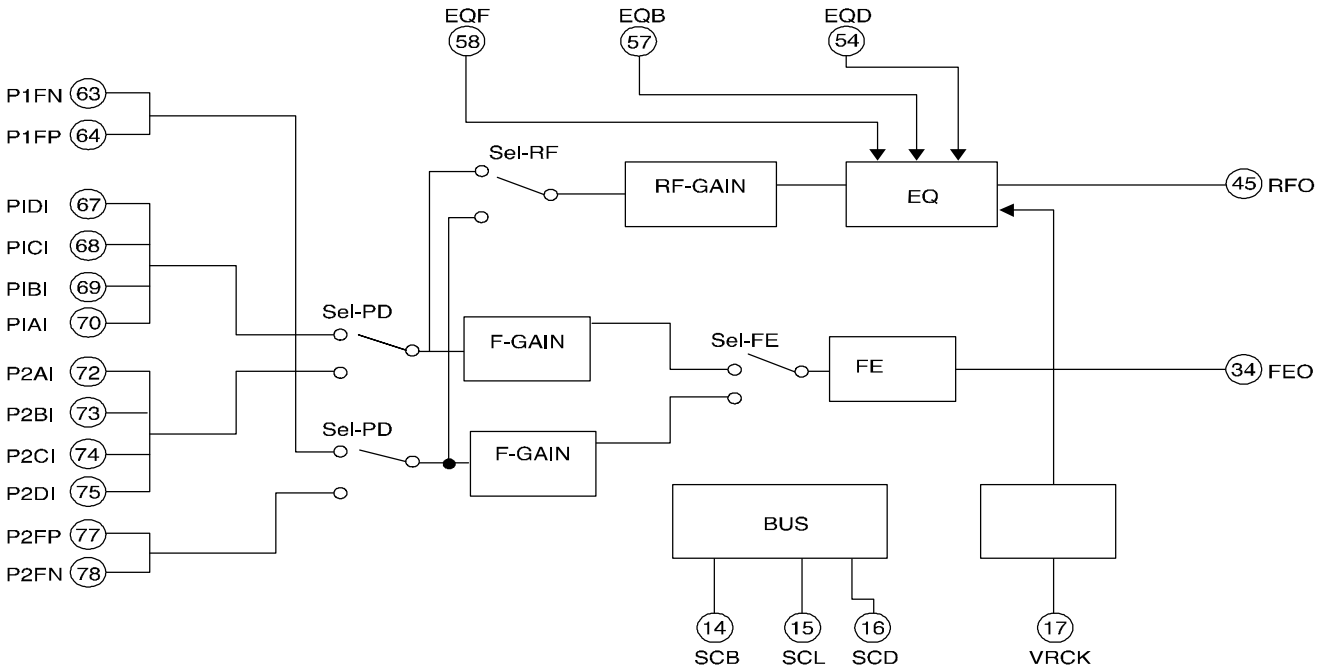


Figure 3-3

3-3-3. SERVO circuit description

3-2-2(A) Outline

SERVO system of DVD is divided into FOCUS SERVO, TRACKING SERVO, STEP MOTOR LINKED SERVO and SPINDLE MOTOR CONTROL SERVO.

1) FOCUS SERVO

Focus the optical spot outputted from object lens on disc surface correctly by maintaining a regular distance beween object lens of Pick-up and disc for surface vibration of disc.

2) TRACKING SERVO

Make the object lens follow the disc track in use of tracking error signal created from Pick-up.

3) STEP MOTOR LINKED SERVO

When the tracking actuator inclines to outer as the object lens follow the track at play, move STEP motor a little. and prevent it from leaning.

4) SPINDLE MOTOR CONTROL SERVO

Control the disc motor to maintain a constant angular velocity in use of FG signal outted in Drive IC.

3 - 2 - 2(B) SERVO SYSTEM BLOCK DIAGRAM

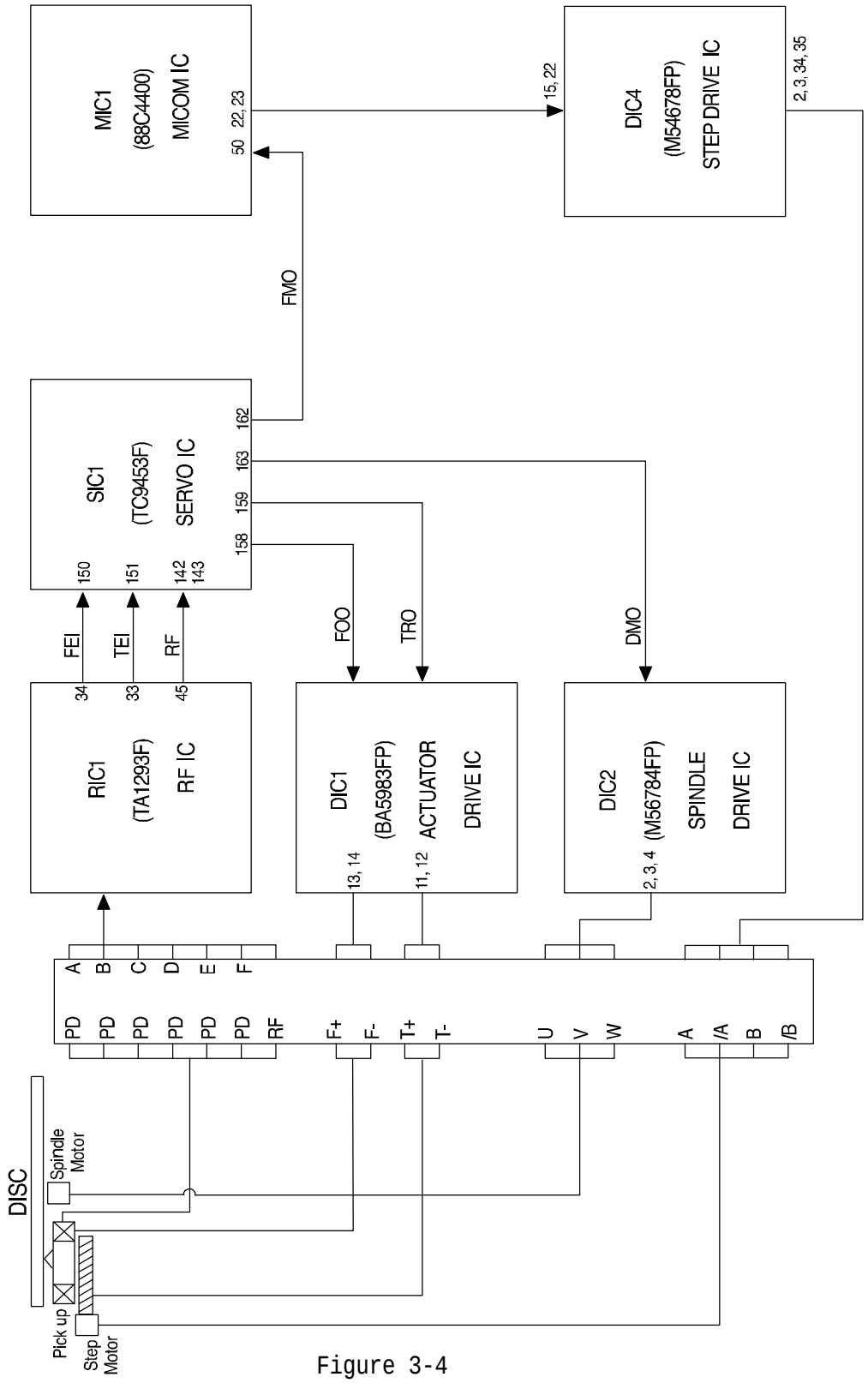


Figure 3-4

3-2-2(C) Operation descriptions

1) Focusing SERVO

(1) Focus input

The focus loop is changed from open loop to close loop. The triangular waveform moves the object lens up and down in 158pin terminal of SIC1 at Focus SERVO ON. At that time, S curve is inputted to 150 pin terminal of SIC1. SBAD (152pin terminal of SIC1) signal, summing signal of PD A, B, C, D, is gernerated at occurrence of S curve and zero cross(1.7V)point is found by S curve and focused on when SBAD signal exceeds a regular value. The focus loop is changed into close loop and the object lens follows the moving of disc, maintaining a regular distance with disc. While, this operations are same in CD and DVD.

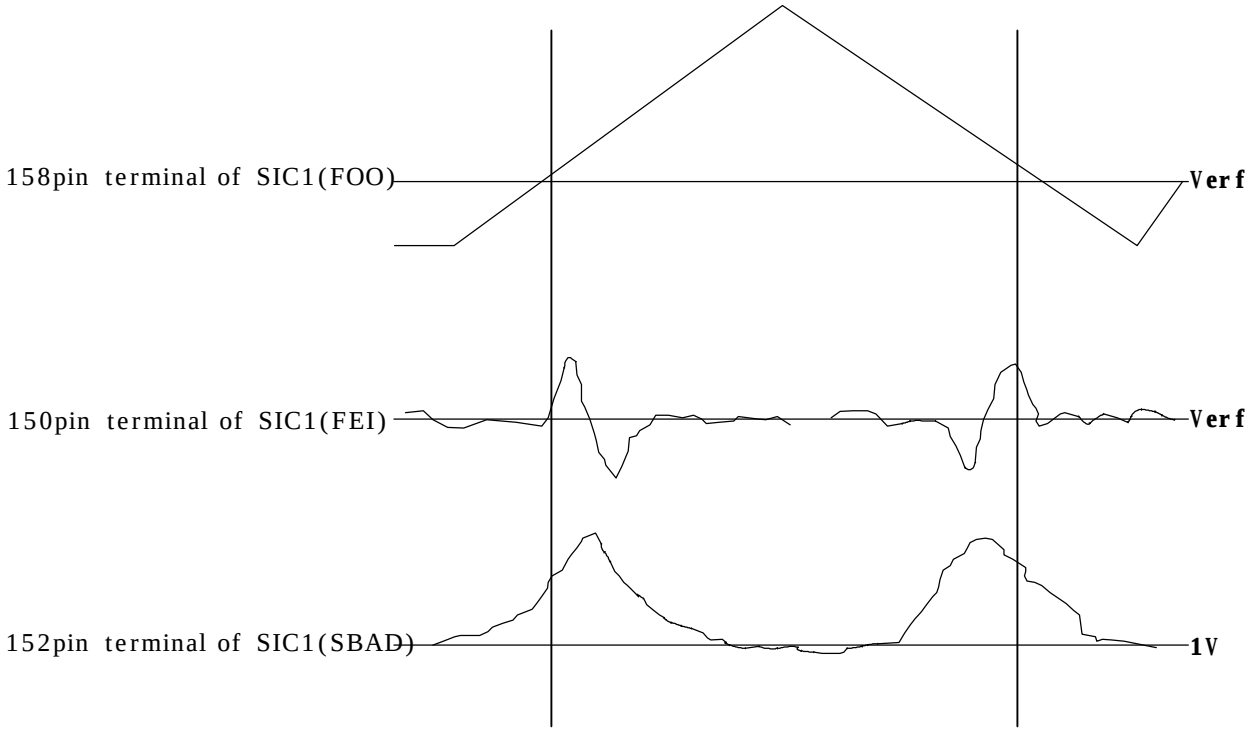


Figure 3-5

(2) Play

When focus loop gets to close loop at focus servo on, both 150pin and 158pin terminal of SIC1 are contolled by Vref voltage(approx.1.7V)and focus on cascade on the disc up and down.

2) TRACKING SERVO

¢Å NORMAL PLAY MODE

(1)For DVD

Make the signal outputted though PD A, B, C, D of Pick-up, tracking error signal in use of phase difference of A+C and B+D in RIC1and inputted to SIC1151(TEI) terminal. This signal is out-putted to SIC1 159 terminal(TRO) via digital equalizer and impressed to tracking actuator through DIC1. SIC1 159 terminal is contolled in Vref(approx 1.7V)at normal play.

(2) For CD, VCD

Reccive the signal outputted though E,F of Pick-up, from RIC1, differently from DVD and make the tracking error signal though RIC133pin terminal.

¢Å SEARCH MODE

Search mode is divided into fine seek, moving the tracking actuator a little and coarse serch, moving much in use of STEP motor. The coarse search will be described in STEP linked servo and now, the fine seek is explained shortly. If the object lens is located near target, cut off the tracking loop and give the control signal as many as desired count to move the tracking actuator via SIC1 159pin term-inal(TRO).

3) STEP LINKED SERVO

¢Å NORMAL PLAY MODE

During the play signal come from 162pin of SIC1 where according to movement of the tracking actuator along the track, and the signal is turn into terminal 50 of micom.

¢Å COARSE SEARCH MODE

After making seek lead the track make search for ID , and check up the number of must-go-track, in case the remaining track is within the extend of fine seek, move the fine seek to object track. In case pick up move in the long distance, the step motor move to half-step use the profile of must-go velocity in micom(MIC1).

4) SPINDLE MOTOR CONTROL SERVO

The FG is generated DIC2 39terminal rotation of disk, and this signal is inputted SIC1 175terminal where is outputted SIC1 163terminal with ckeck up velocity.

This signal is supplied in DIC2 25terminal where control velocity of rotation at disk. The disk is rotated standard angular velocity(CAV FORM) without relations of the inside and the outside of circumference of pick up.

3 - 2 - 3. ATAPI interface circuit description (IIC1 : TC9469F)

3 - 2 - 3(A) ATAPI

ATAPI is interface specificaton to add SCSI paket command to the interface of HDD and support DVD - ROM drive as abbreviation of AT ATTACHMENT PACKET INTERFACE.

3 - 2 - 3(B) Interface operation introduction

Micom judges the command type, controls SERVO IC, reads data from disk, sends to IIC1 interface IC and transmitts them to host at receiving a command(READ, SEEK, etc)from host(computer). Especia - lly, in case of READ command, it stores the data read from disk in 416C254(IIC2:RAM)before trans - mission to host.

¢Å CD-ROM disk

Data are transferred to interface IC(IIC1 : TC9469F)though servo(SIC1 : TC9453F), stored in memory af- ter decoding and error correcting and then sent to host.

¢Å DVD-VIDEO, ROM disk

Data are transferred to interface IC through copy protection Servo IC(SIC1 : TC9453F)after error corr- ecting in data processor and stored in memory before transmission to host

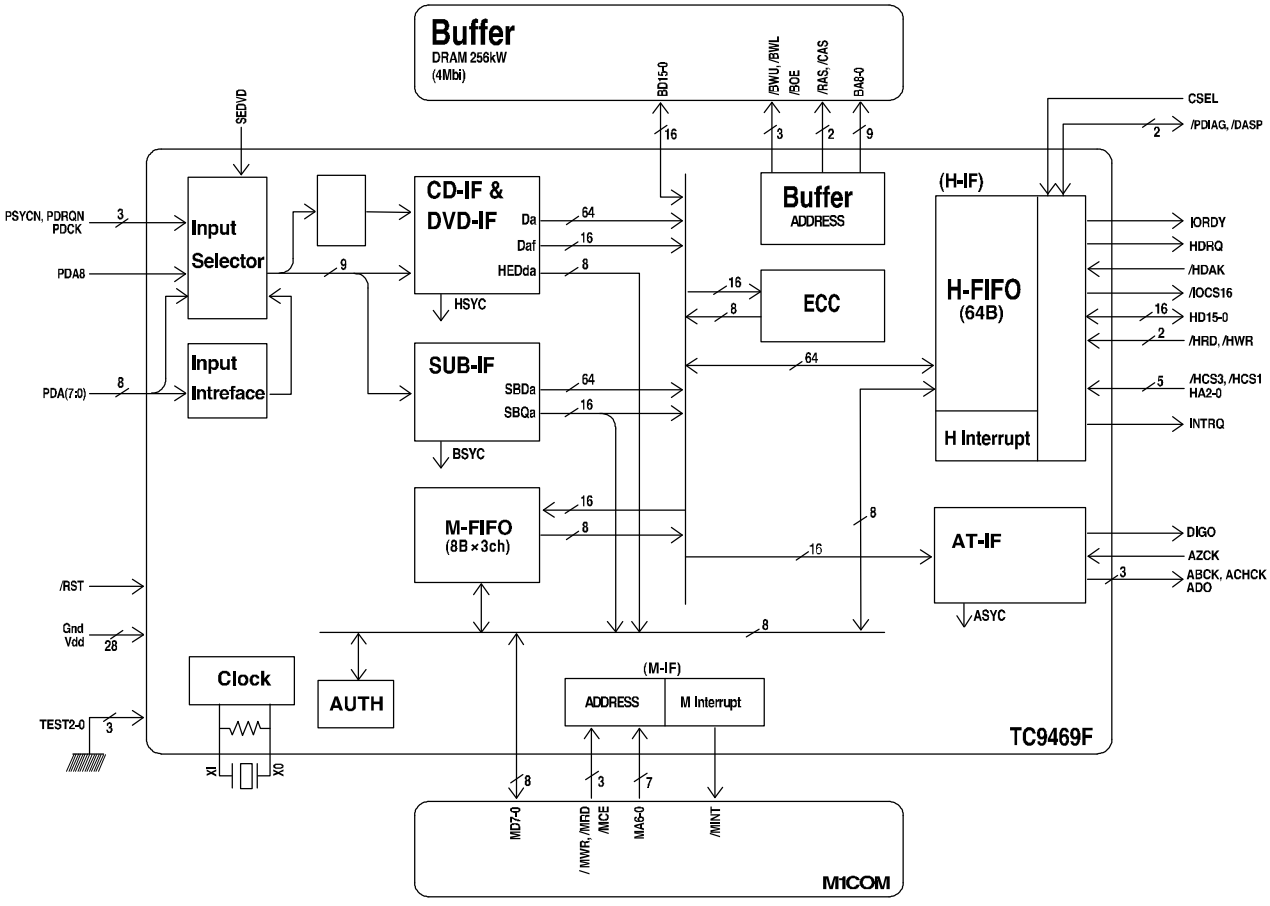


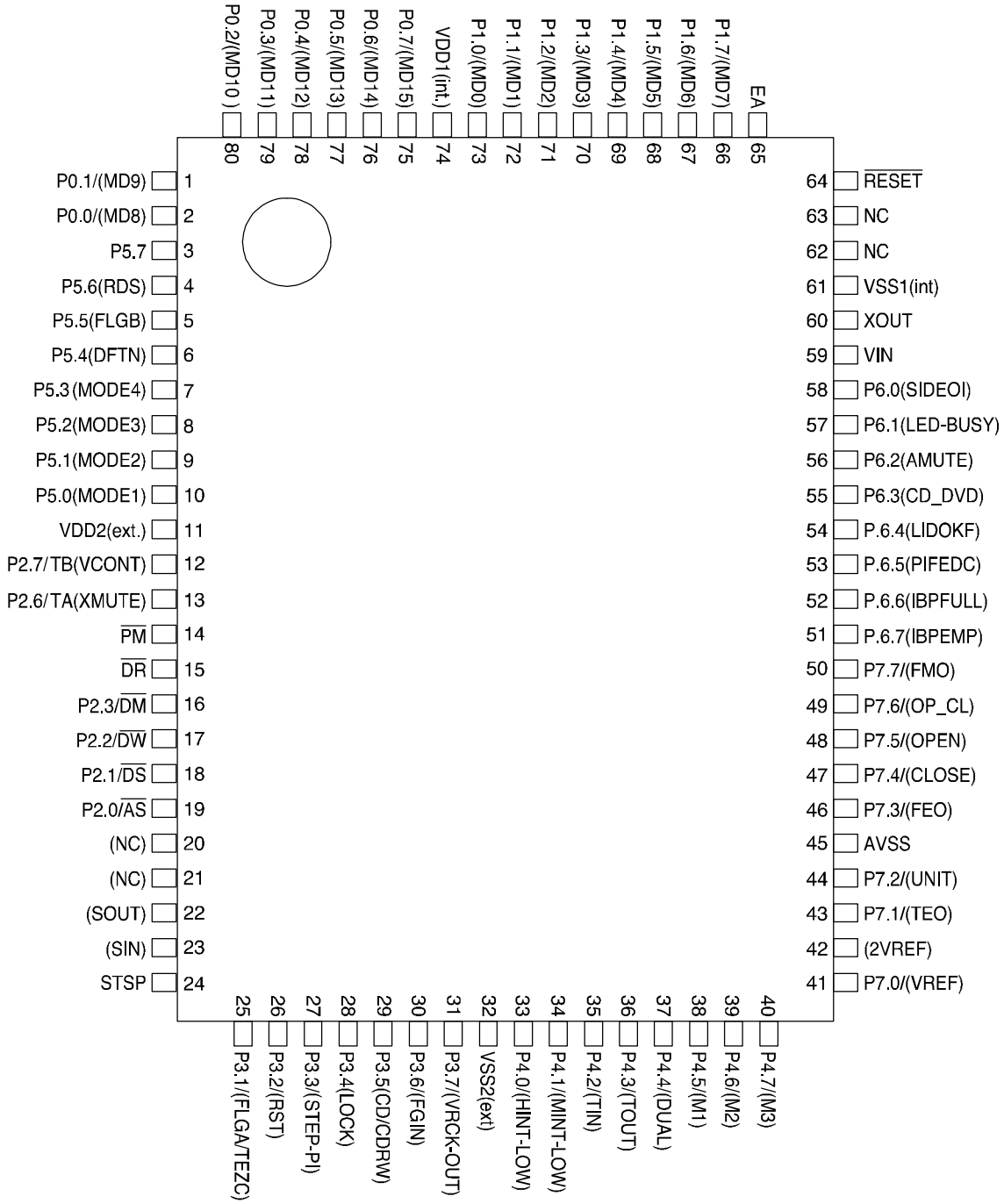
Figure3-8

3 - 2 - 4. FIRMWARE

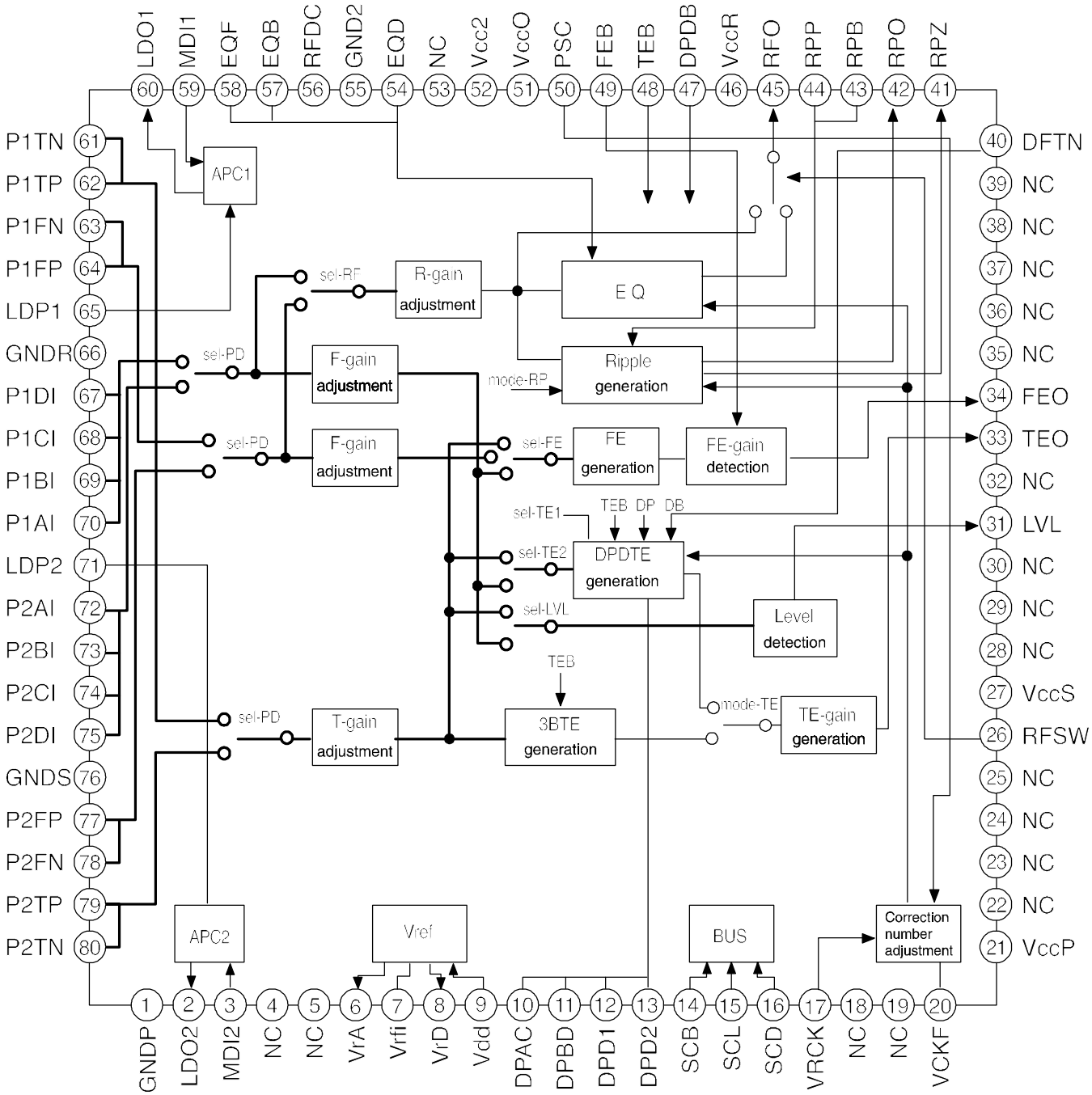
¢Å For flash memory using model, the version may be changed by downloading the micom program in PC without ROM replacement.
Utilize FROMDOS.EXE supplied separately as download program.

3 - 4. IC ³»ºÎ ºí·Ï ¹× ICÇÉ »ç¾ç

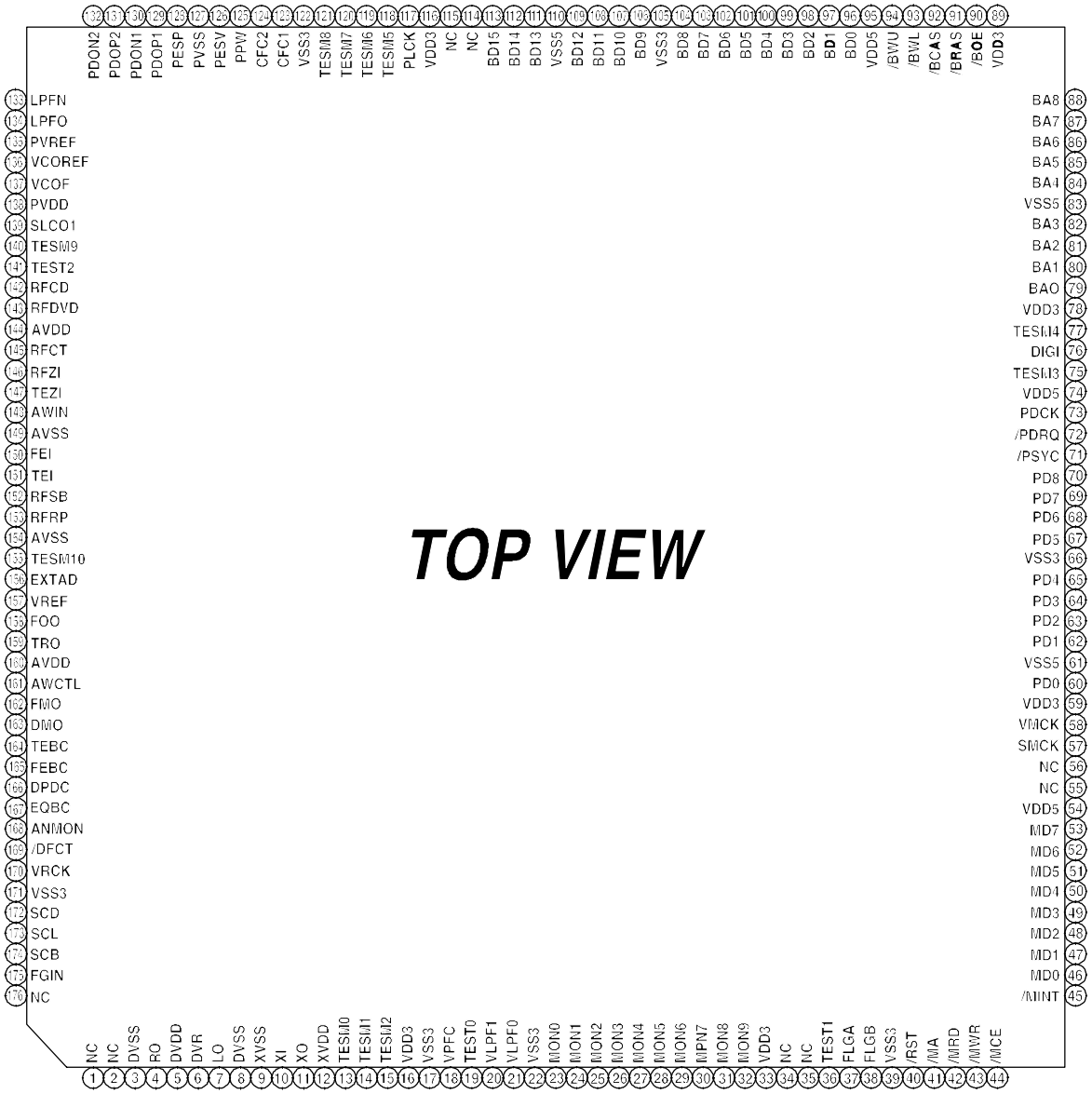
3 - 4 - 1 MIC1(KS88C4400)



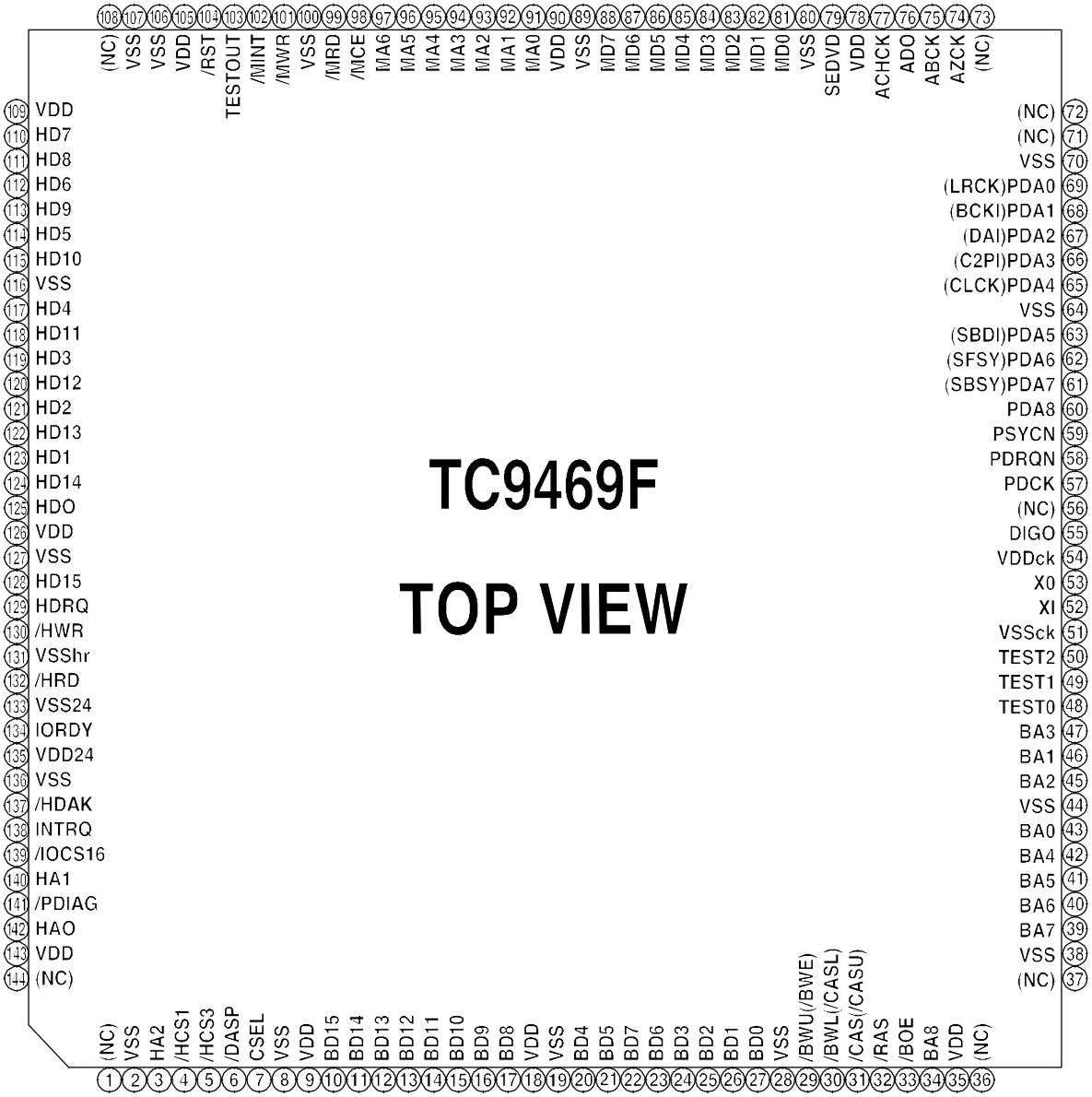
3 - 4 - 2 RICI(TA1293F)



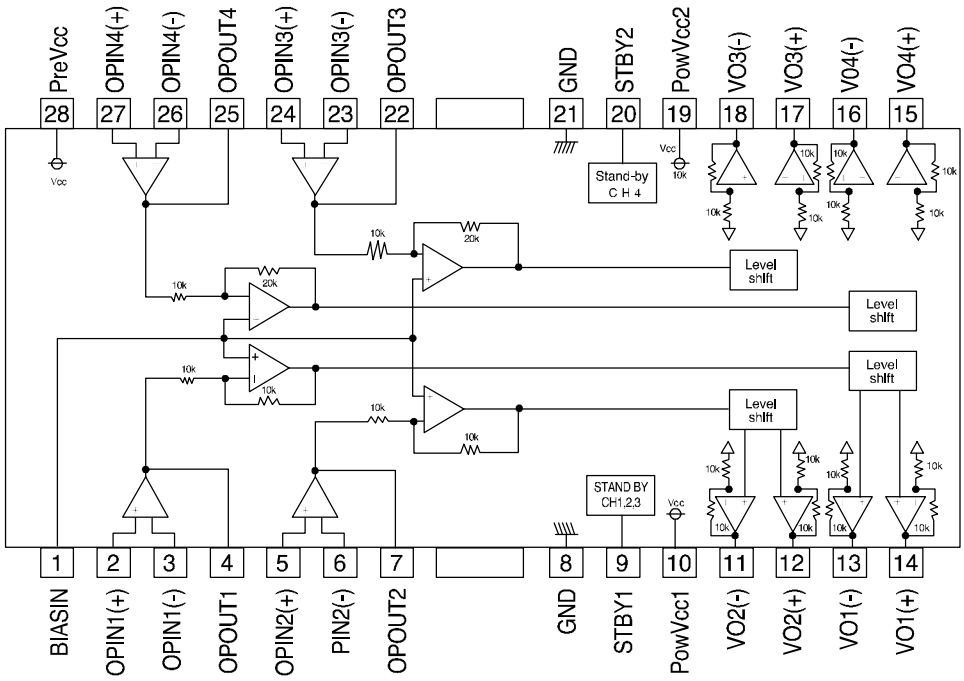
3 - 4 - 3 SICI(TC 9453F)



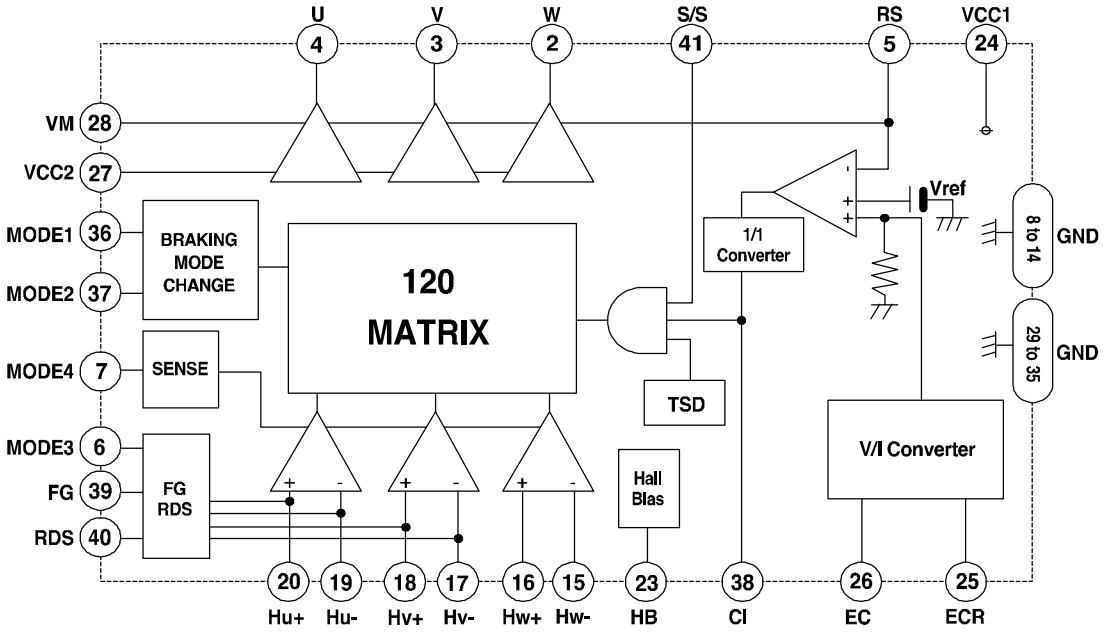
3 - 4 - 4 IIC1(TC9469F)



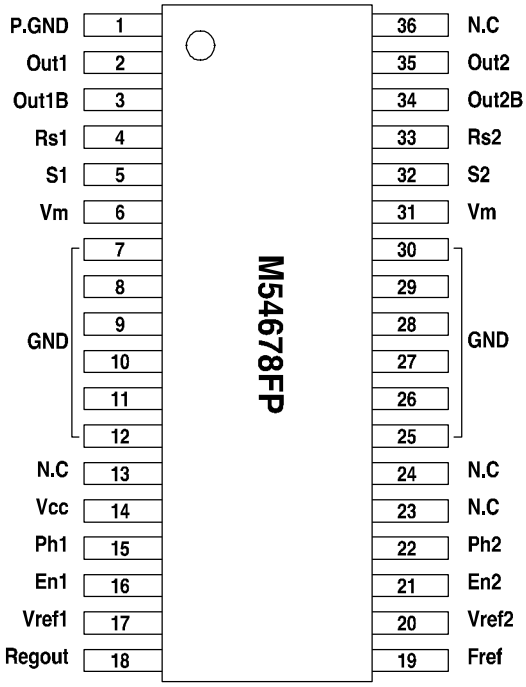
3 - 4 - 5 DIC1(BA5983F)



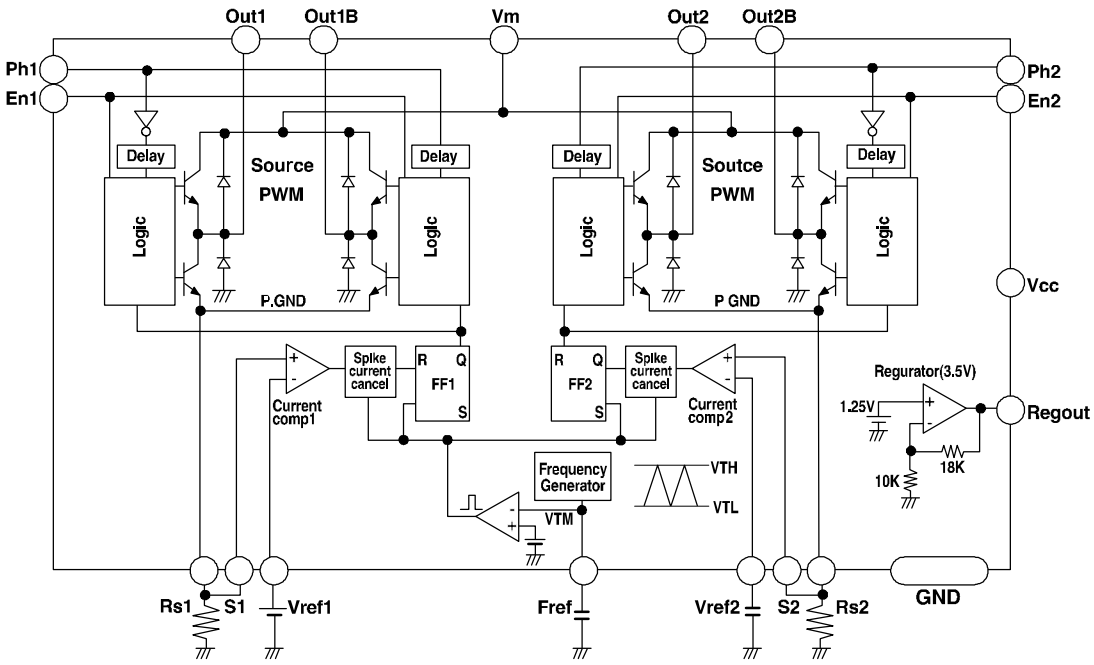
3 - 4 - 6 DIC2(M56784FP)



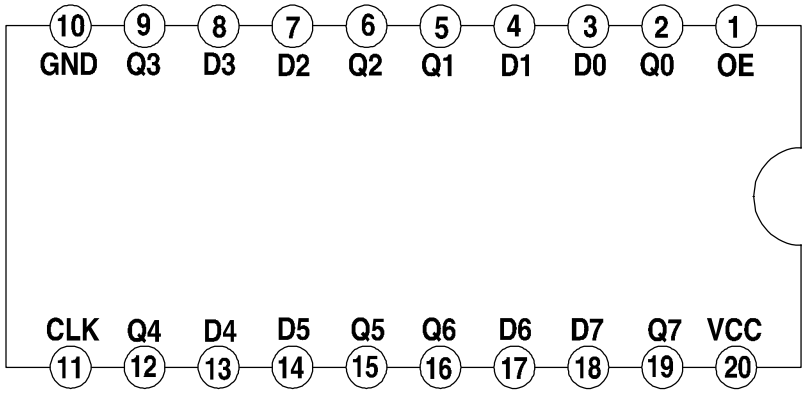
3 - 4 - 7 DIC4(M54678FP)



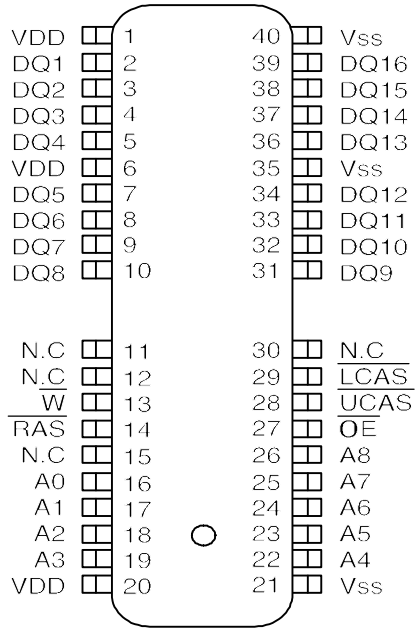
¡Ü ³»°Î BLOCKµµ



3 - 4 - 8 MIC2(74HC374)

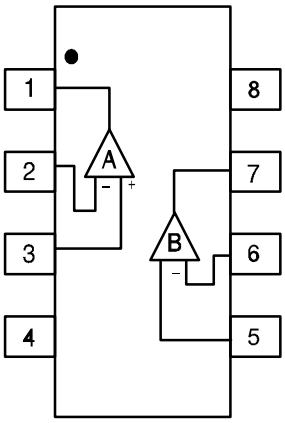


3 - 4 - 9 SIC2, IIC2(KM416C254DJ - 4)



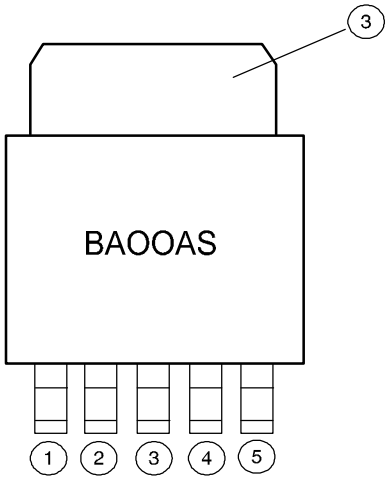
Pin Name	Pin Function
A0-A8	Address Inputs
DQ1-DQ16	Date In/Out
Vss	Ground
$\overline{RAS}$	Row Address Strobe
$\overline{UCAS}$	Upper Column Address Strobe
$\overline{LCAS}$	Lower Column Address Strobe
$\overline{W}$	Read/Write Input
$\overline{OE}$	Date Output Enable
VDD	Power (+5V)
	Power (+3.3V)
N.C	No Connection

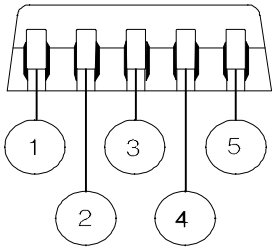
3 - 4 - 10 AIC1(NJM3414)



PIN FUNCTION
1. A OUTPUT
2. A - INPUT
3. A+INPUT
4. GND
5. B+INPUT
6. B - INPUT
7. B OUTPUT
8. V+

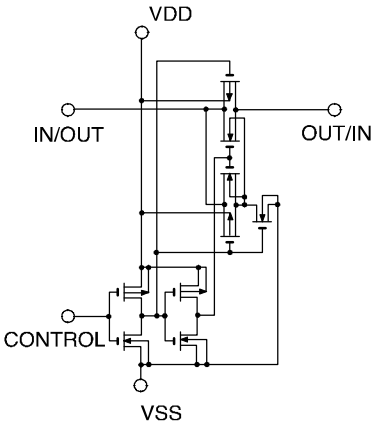
3 - 4 - 11 PIC1, PIC5

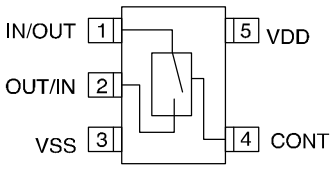




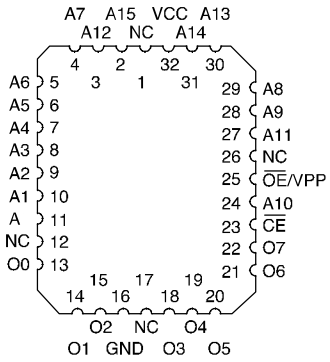
¨ç ON/OFF control(Vc)
¨è DC input(Vin)
¨é GND
¨ê DC output(Vo)
¨ë Output Voltage adjustment(Vadj)

3 - 4 - 12 RIC2(TC4S66F)





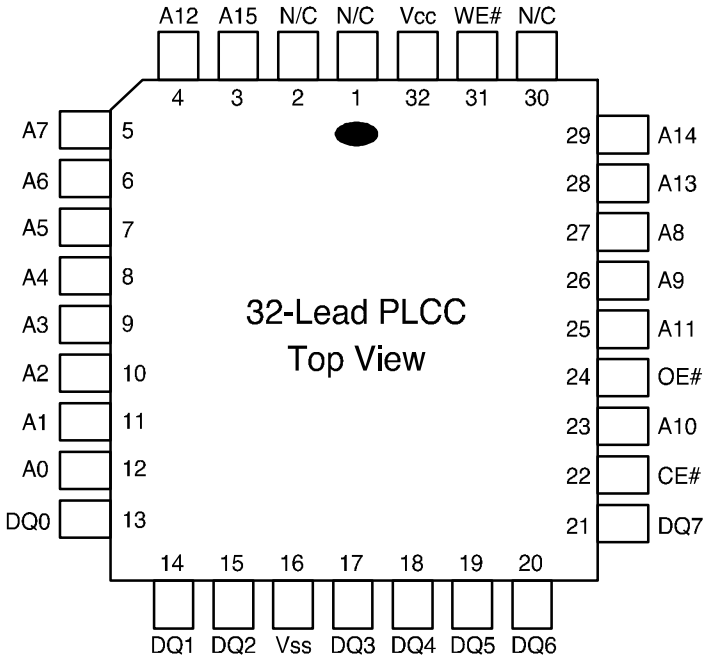
3 - 4 - 13 MIC3(AT27C512R)



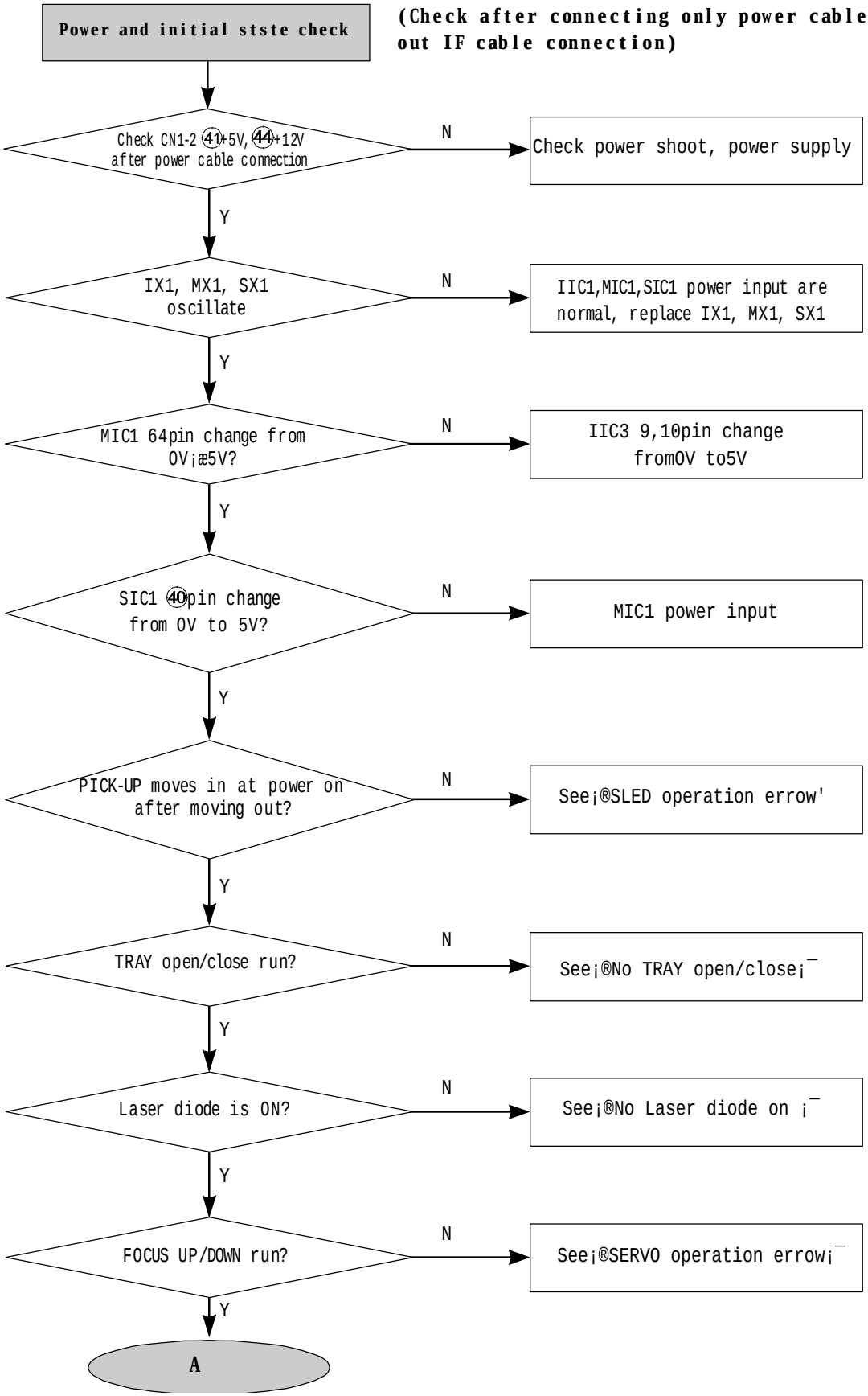
Pin Name	Function
A0-A15	Addresses
O0-O7	Outputs
$\overline{CE}$	Chip Enable
$\overline{OE}$/Vpp	Output Enable/Vpp
NC	No Connect

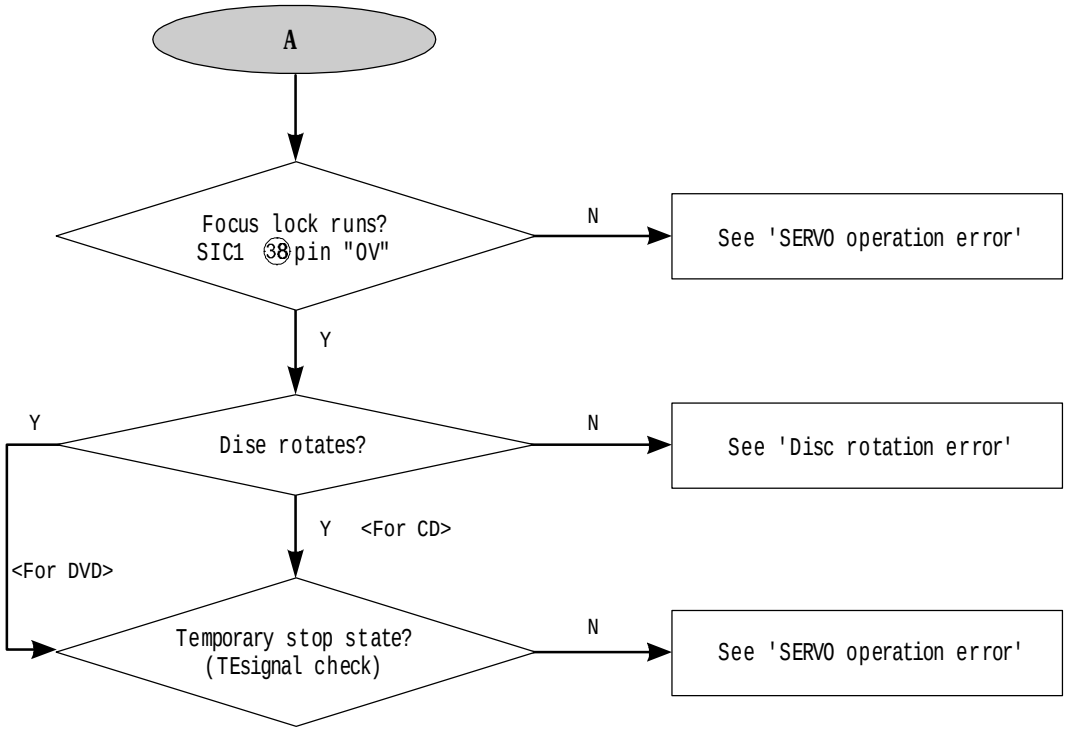
Mode/Pin	$\overline{CE}$	$\overline{OE}/V_{PP}$	Ai	Outputs
Read	V_{IL}	V_{IL}	Ai	D_{OUT}
Output Disable	V_{IL}	V_{IL}	X[1]	High Z
Standby	V_{IH}	X[1]	X	High Z
Pid Program[2]	V_{IL}	V_{PP}	Ai	D_{IN}
GM Inhibit	V_{IH}	V_{PP}	X[1]	High Z
Duct Identification[4]	V_{IL}	V_{IL}	A9=V_H[3] A0=V_{IH} or V_{IL} A1-A15=V_{IL}	IdentificationCode

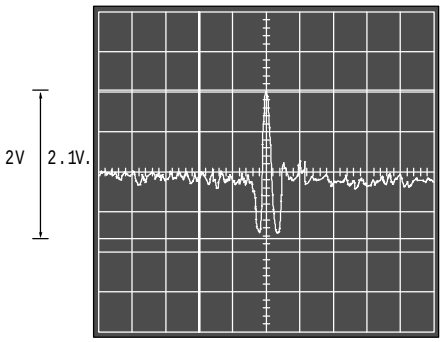
3 - 4 - 14 MIC4(29EE512)



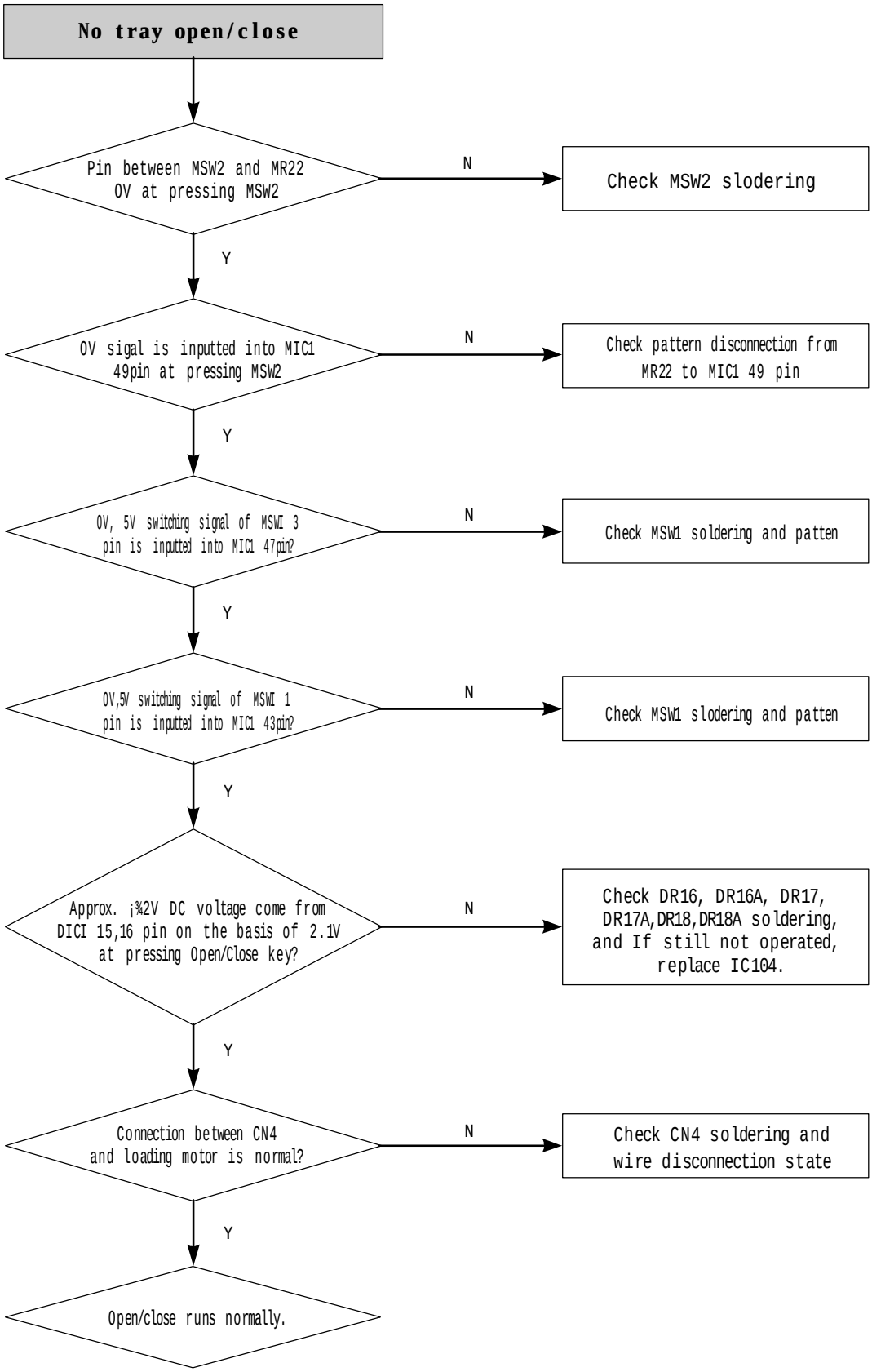
3 - 3. Trouble shooting

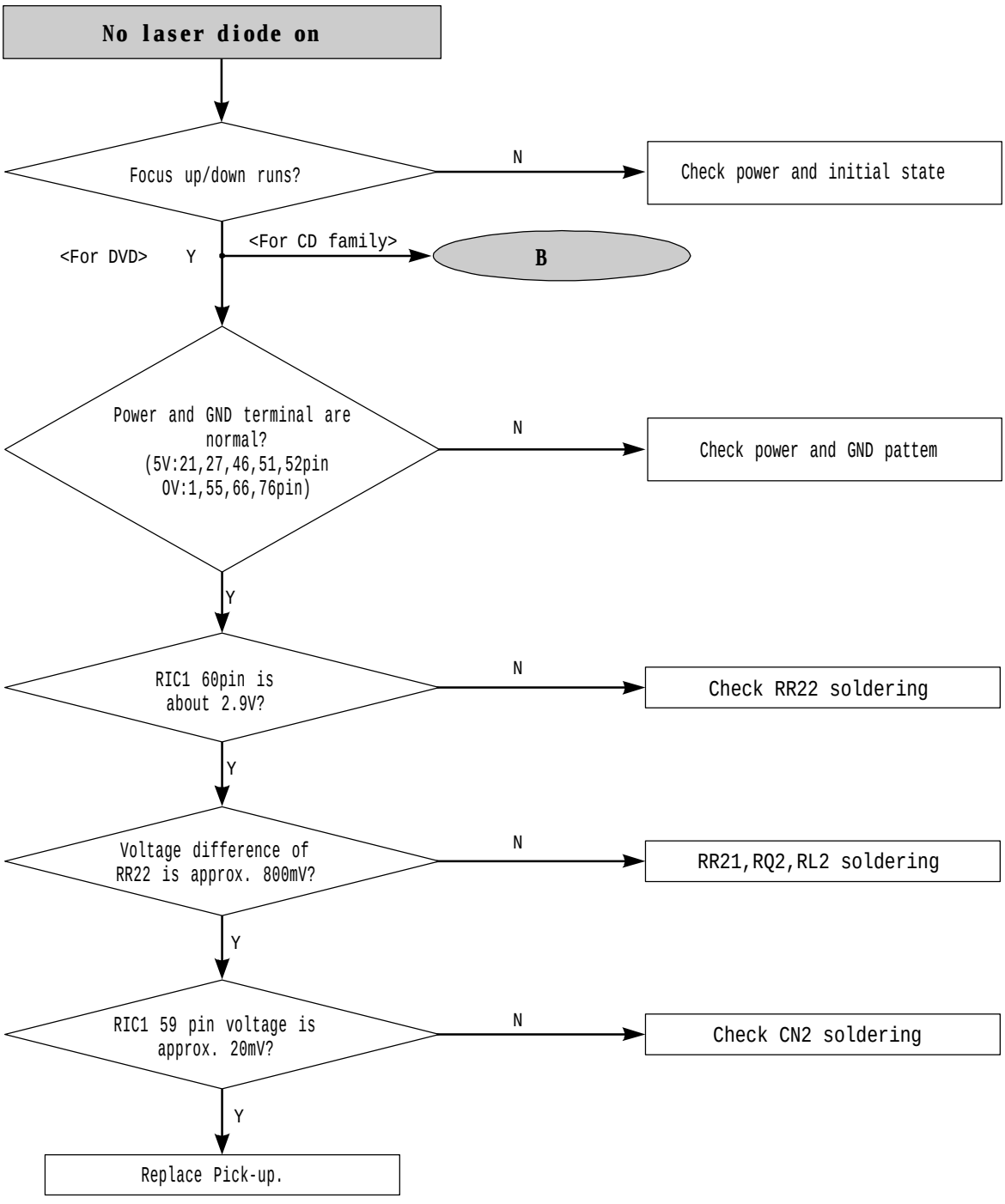


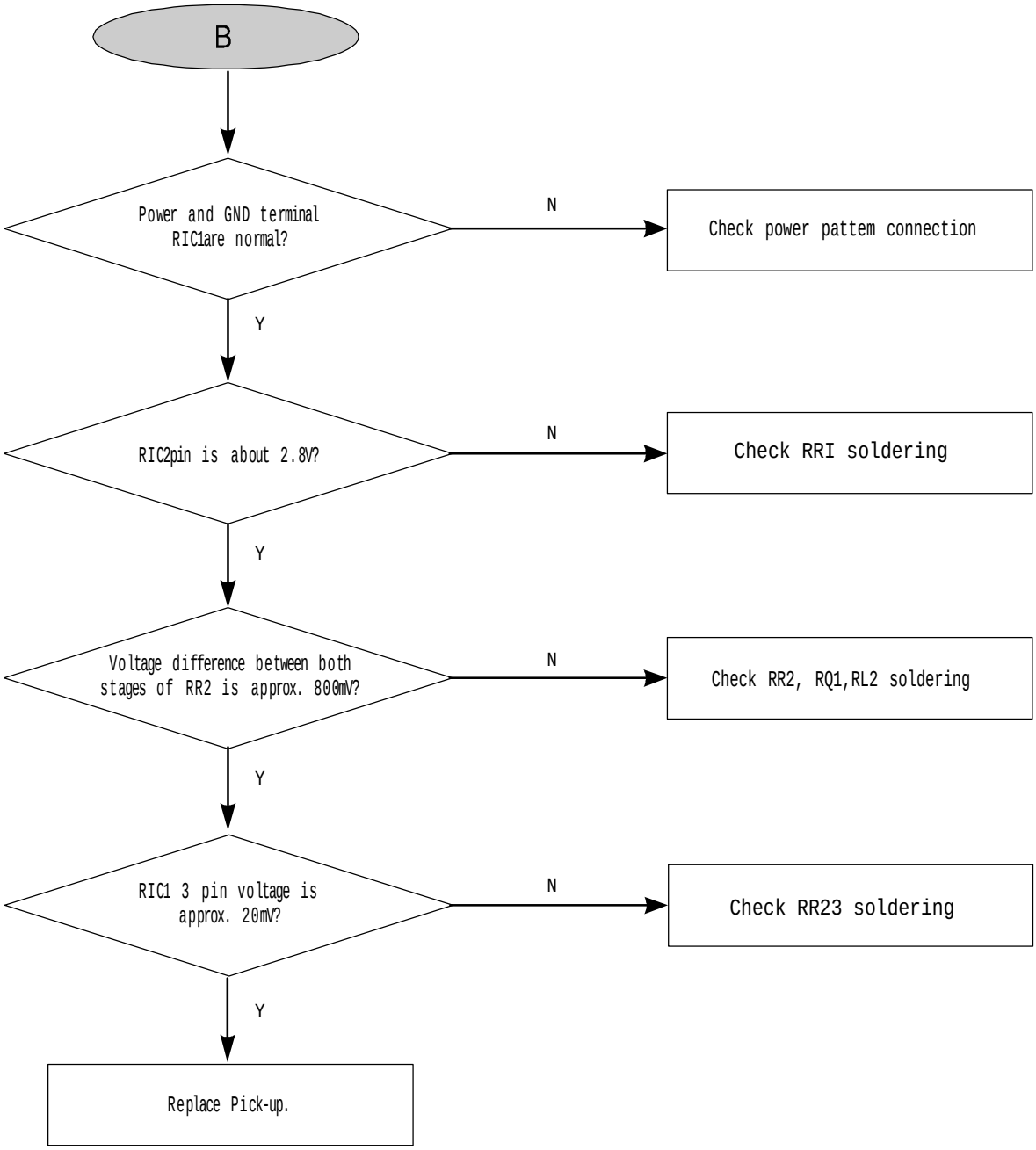


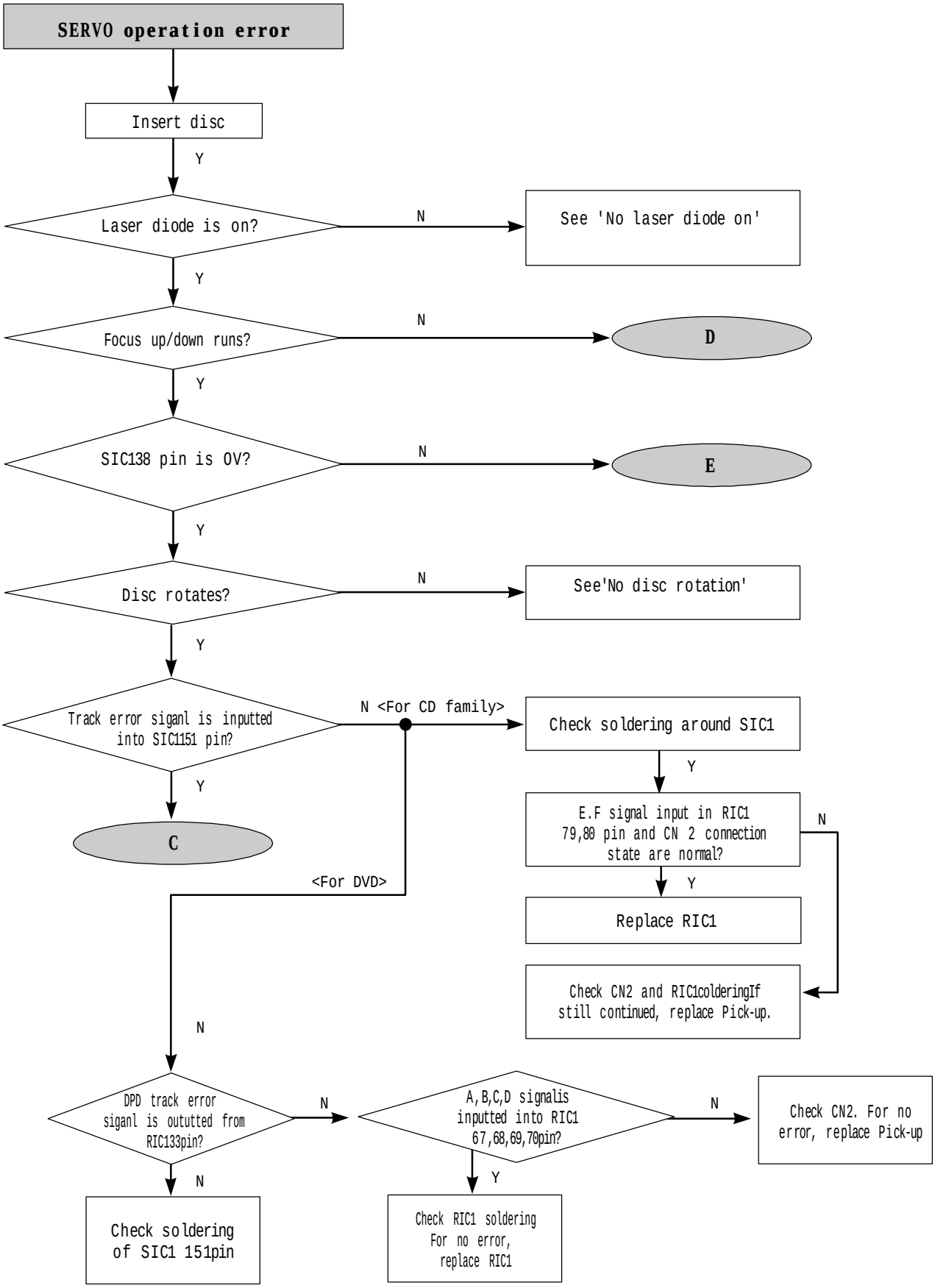


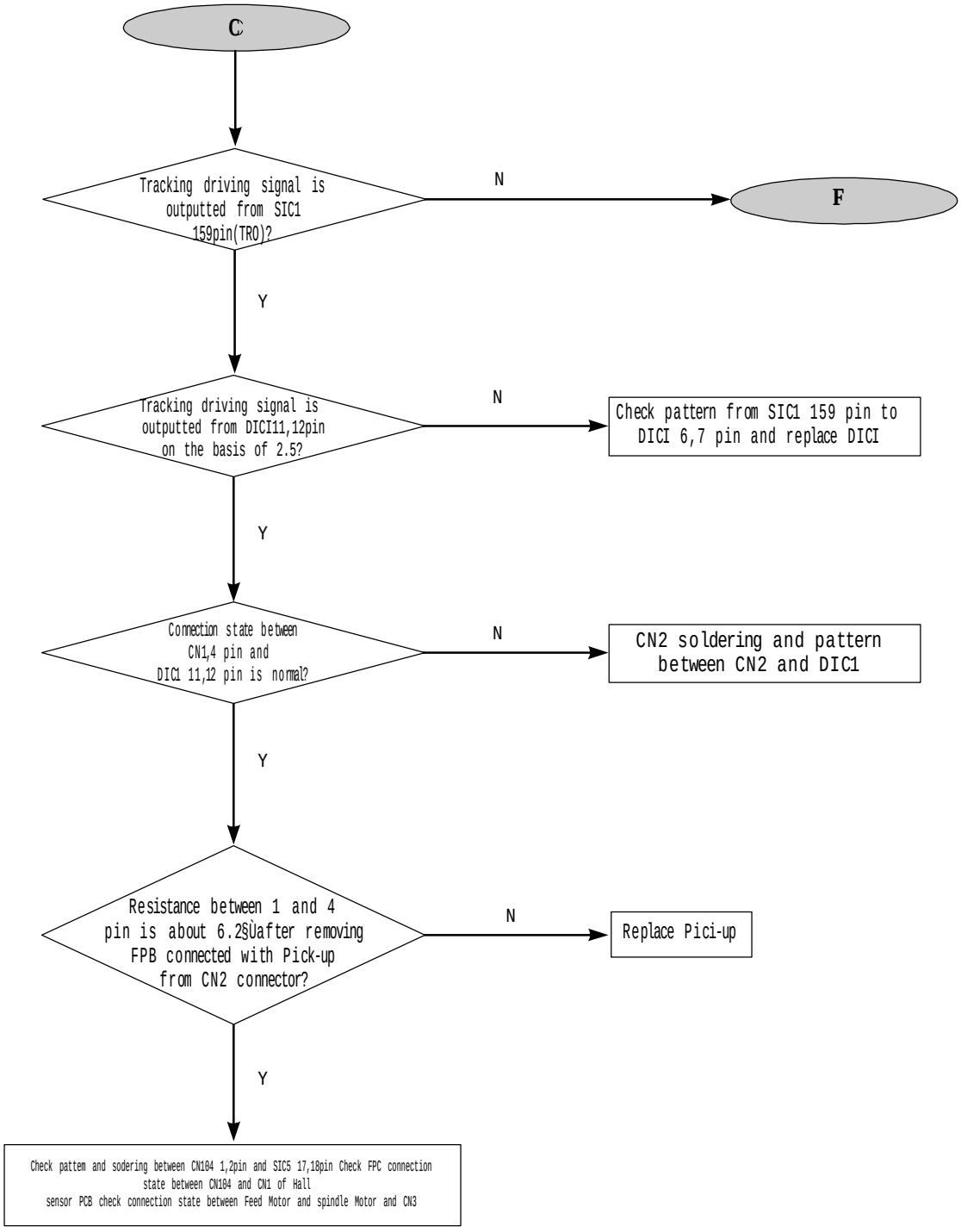
<TE signal at track jump>
(Temporary half state for DVD)

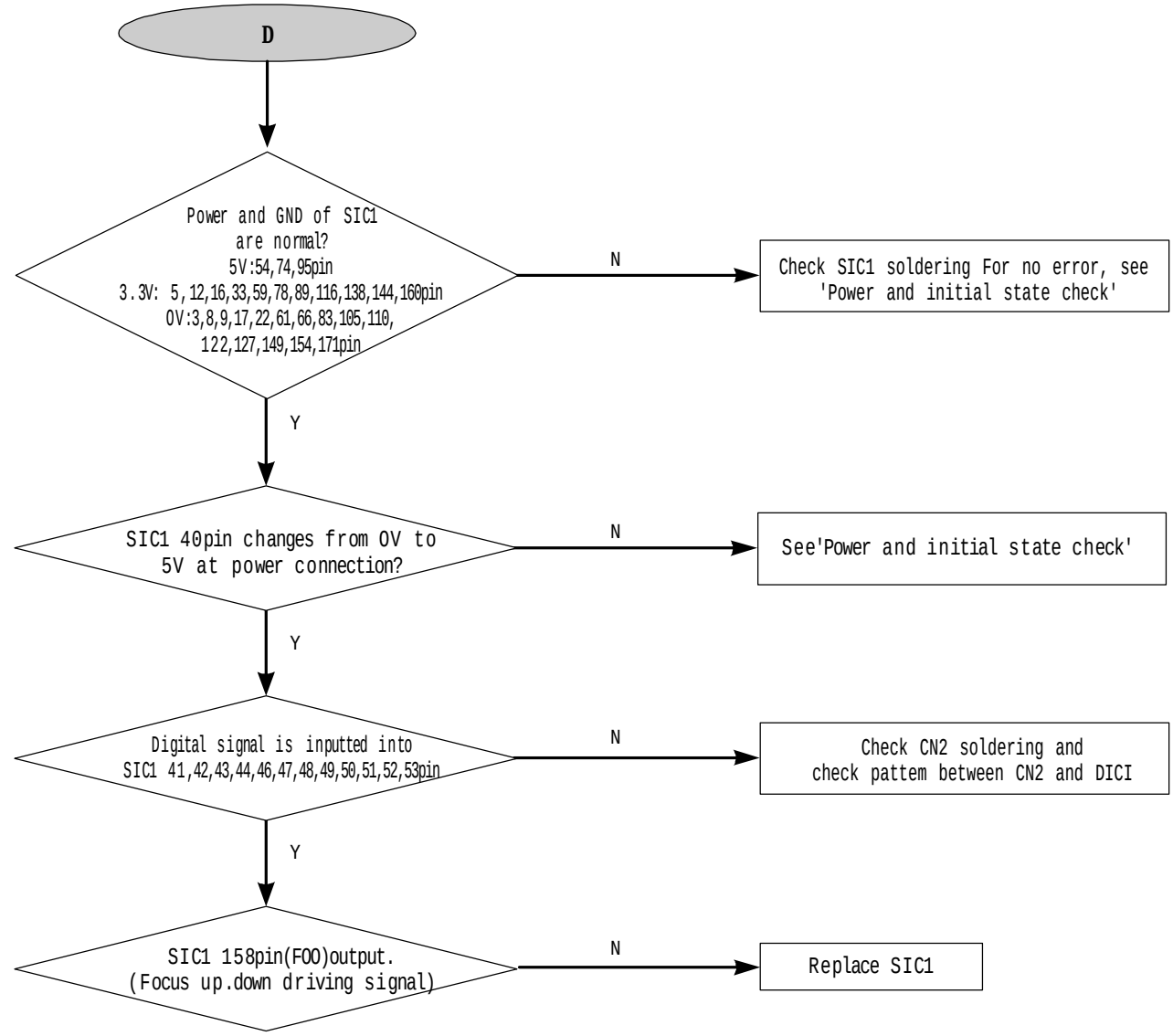

No tray open/close
Pin between MSW2 and MR22 OV at pressing MSW2
N
Check MSW2 slodering
Y
OV sigal is inputted into MIC1 49pin at pressing MSW2
N
Check pattern disconnection from MR22 to MIC1 49 pin
Y
OV, 5V switching signal of MSWI 3 pin is inputted into MIC1 47pin?
N
Check MSW1 soldering and patten
Y
OV,5V switching signal of MSWI 1 pin is inputted into MIC1 43pin?
N
Check MSW1 slodering and patten
Y
Approx. ¡¾2V DC voltage come from DICI 15,16 pin on the basis of 2.1V at pressing Open/Close key?
N
Check DR16, DR16A, DR17, DR17A,DR18,DR18A soldering, and If still not operated, replace IC104.
Y
Connection between CN4 and loading motor is normal?
N
Check CN4 soldering and wire disconnection state
Y
Open/close runs normally.

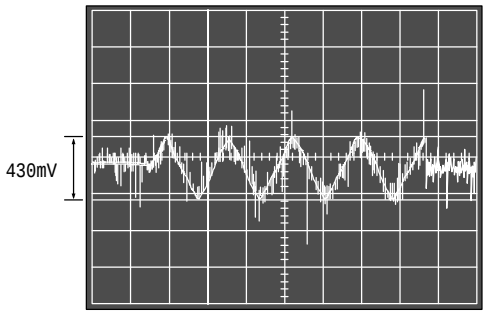

No laser diode on
Focus up/down runs?
N
Check power and initial state
<For DVD> Y
<For CD family>
B
Power and GND terminal are normal?
(5V:21,27,46,51,52pin
0V:1,55,66,76pin)
N
Check power and GND pattem
Y
RIC1 60pin is about 2.9V?
N
Check RR22 soldering
Y
Voltage difference of RR22 is approx. 800mV?
N
RR21,RQ2,RL2 soldering
Y
RIC1 59 pin voltage is approx. 20mV?
N
Check CN2 soldering
Y
Replace Pick-up.


B
Power and GND terminal RIC1are normal?
N
Check power pattem connection
Y
RIC2pin is about 2.8V?
N
Check RRI soldering
Y
Voltage difference between both stages of RR2 is approx. 800mV?
N
Check RR2, RQ1,RL2 soldering
Y
RIC1 3 pin voltage is approx. 20mV?
N
Check RR23 soldering
Y
Replace Pick-up.


SERVO operation error
Insert disc
Y
Laser diode is on?
N
See 'No laser diode on'
Y
Focus up/down runs?
N
D
Y
SIC138 pin is OV?
N
E
Y
Disc rotates?
N
See'No disc rotation'
Y
Track error siganl is inputted into SIC1151 pin?
N <For CD family>
Check soldering around SIC1
Y
E.F signal input in RIC1 79,80 pin and CN 2 connection state are normal?
N
Y
Replace RIC1
Check CN2 and RIC1colderingIf still continued, replace Pick-up.
Y
C
<For DVD>
N
DPD track error siganl is oututted from RIC133pin?
N
A,B,C,D signalis inputted into RIC1 67,68,69,70pin?
N
Check CN2. For no error, replace Pick-up
N
Y
Check soldering of SIC1 151pin
Check RIC1 soldering For no error, replace RIC1

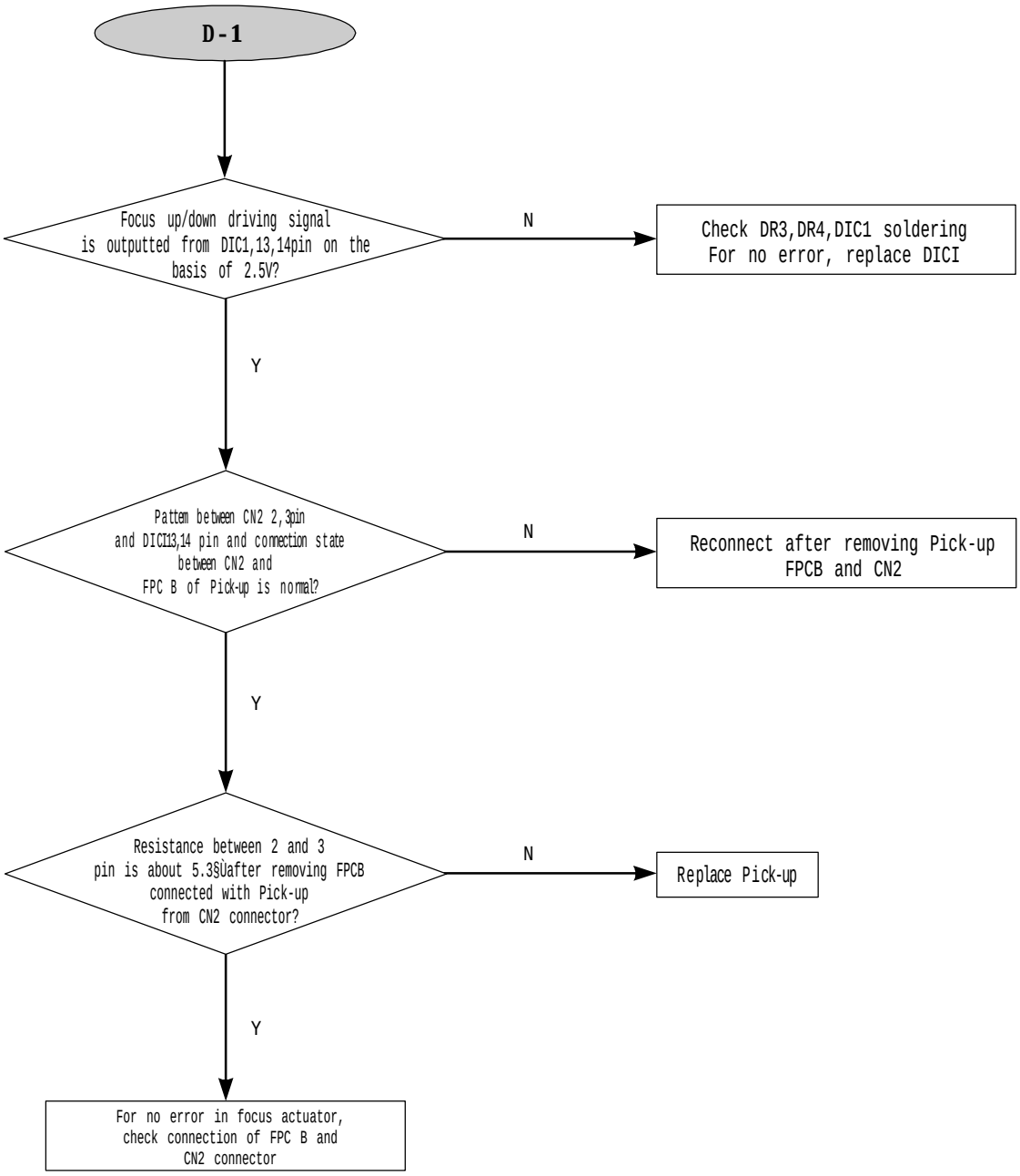

C
Tracking driving signal is outputted from SIC1 159pin(TRO)?
N
F
Y
Tracking driving signal is outputted from DICI11,12pin on the basis of 2.5?
N
Check pattern from SIC1 159 pin to DICI 6,7 pin and replace DICI
Y
Connection state between CN1,4 pin and DIC1 11,12 pin is normal?
N
CN2 soldering and pattern between CN2 and DIC1
Y
Resistance between 1 and 4 pin is about 6.2§Ùafter removing FPB connected with Pick-up from CN2 connector?
N
Replace Pici-up
Y
Check pattem and sodering between CN104 1,2pin and SIC5 17,18pin Check FPC connection state between CN104 and CN1 of Hall sensor PCB check connection state between Feed Motor and spindle Motor and CN3

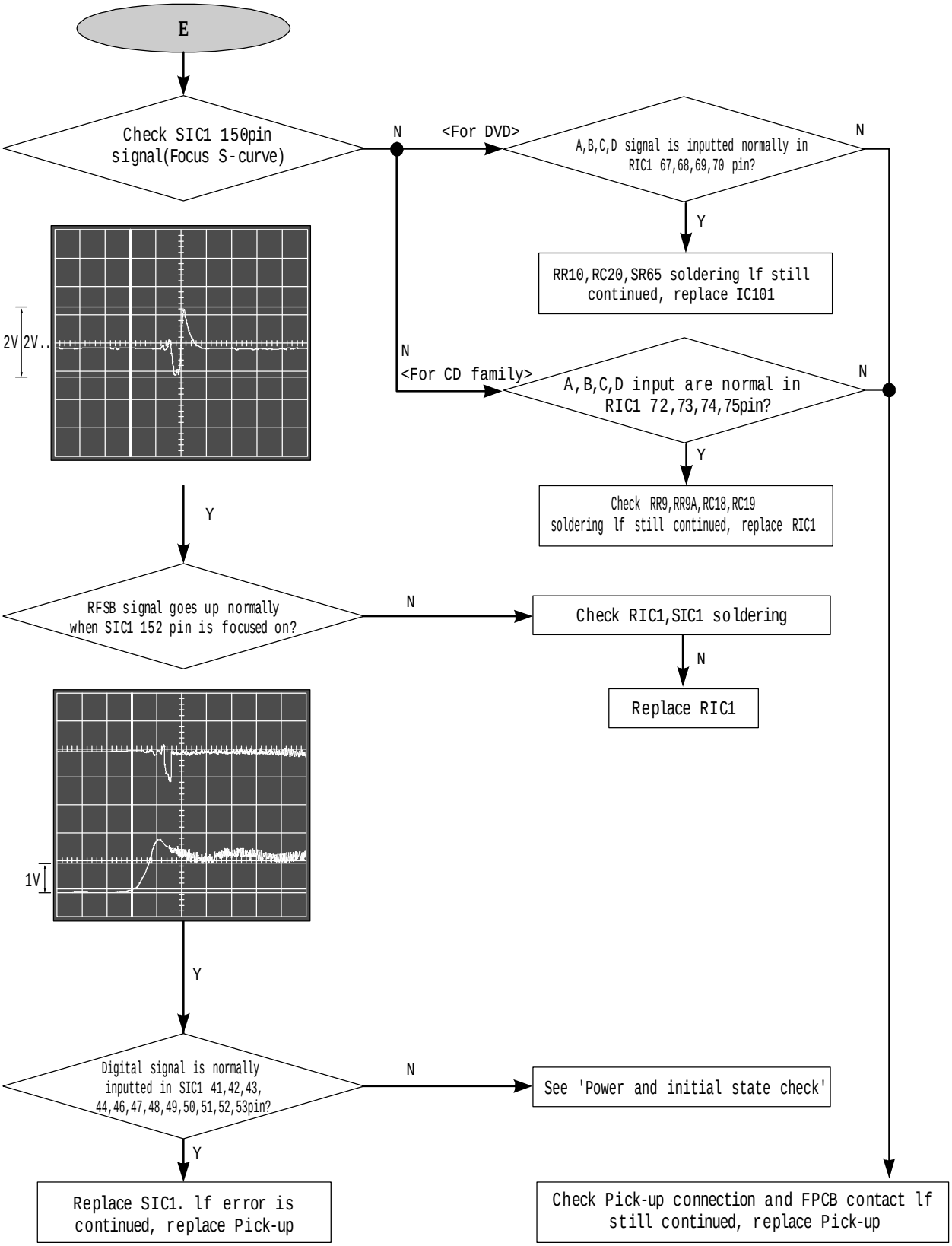

D
Power and GND of SIC1 are normal?
5V:54,74,95pin
3.3V: 5,12,16,33,59,78,89,116,138,144,160pin
0V:3,8,9,17,22,61,66,83,105,110,122,127,149,154,171pin
N
Check SIC1 soldering For no error, see 'Power and initial state check'
Y
SIC1 40pin changes from 0V to 5V at power connection?
N
See'Power and initial state check'
Y
Digital signal is inputted into SIC1 41,42,43,44,46,47,48,49,50,51,52,53pin
N
Check CN2 soldering and check pattem between CN2 and DICI
Y
SIC1 158pin(FOO)output. (Focus up.down driving signal)
N
Replace SIC1

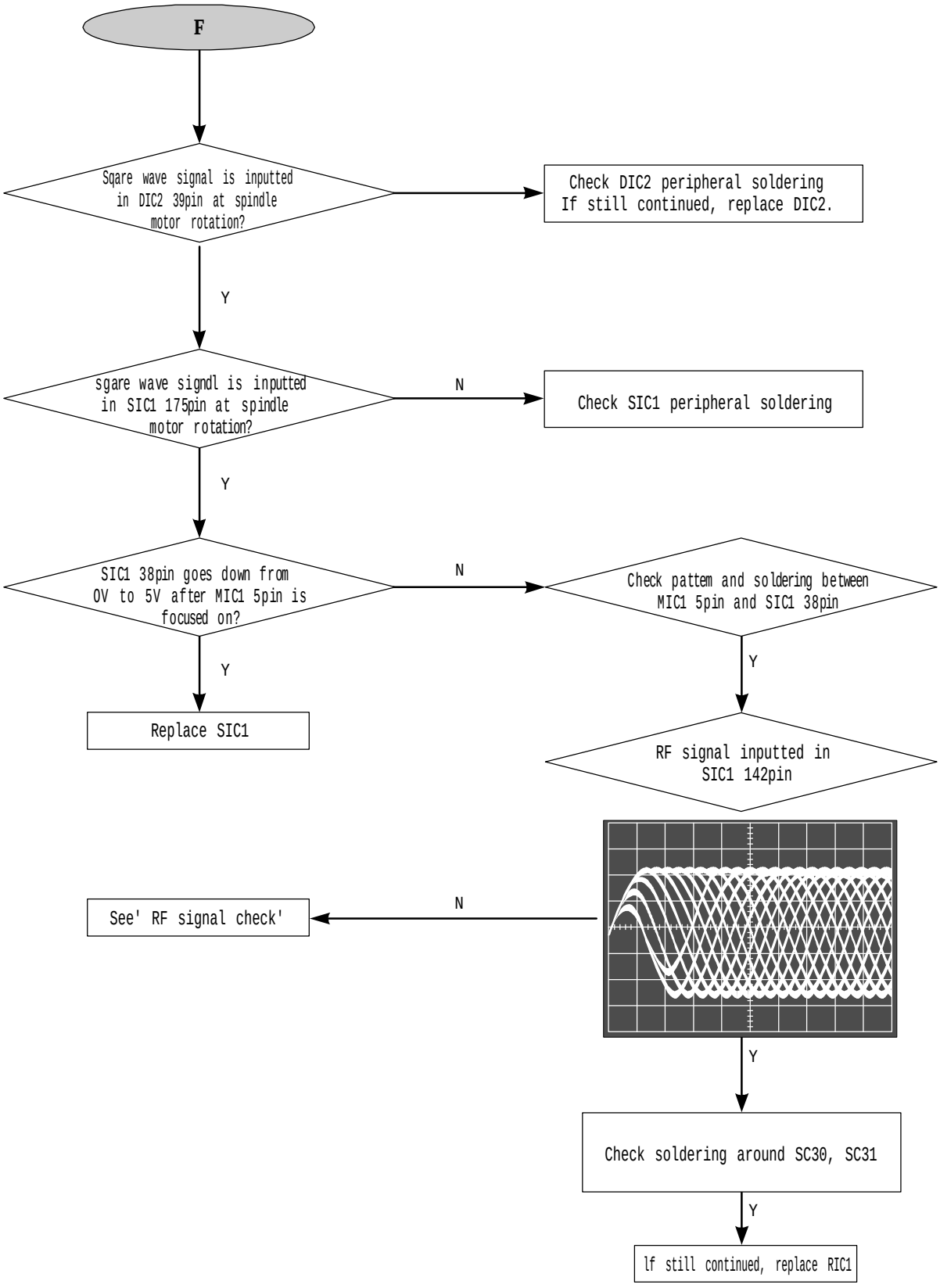

430mV

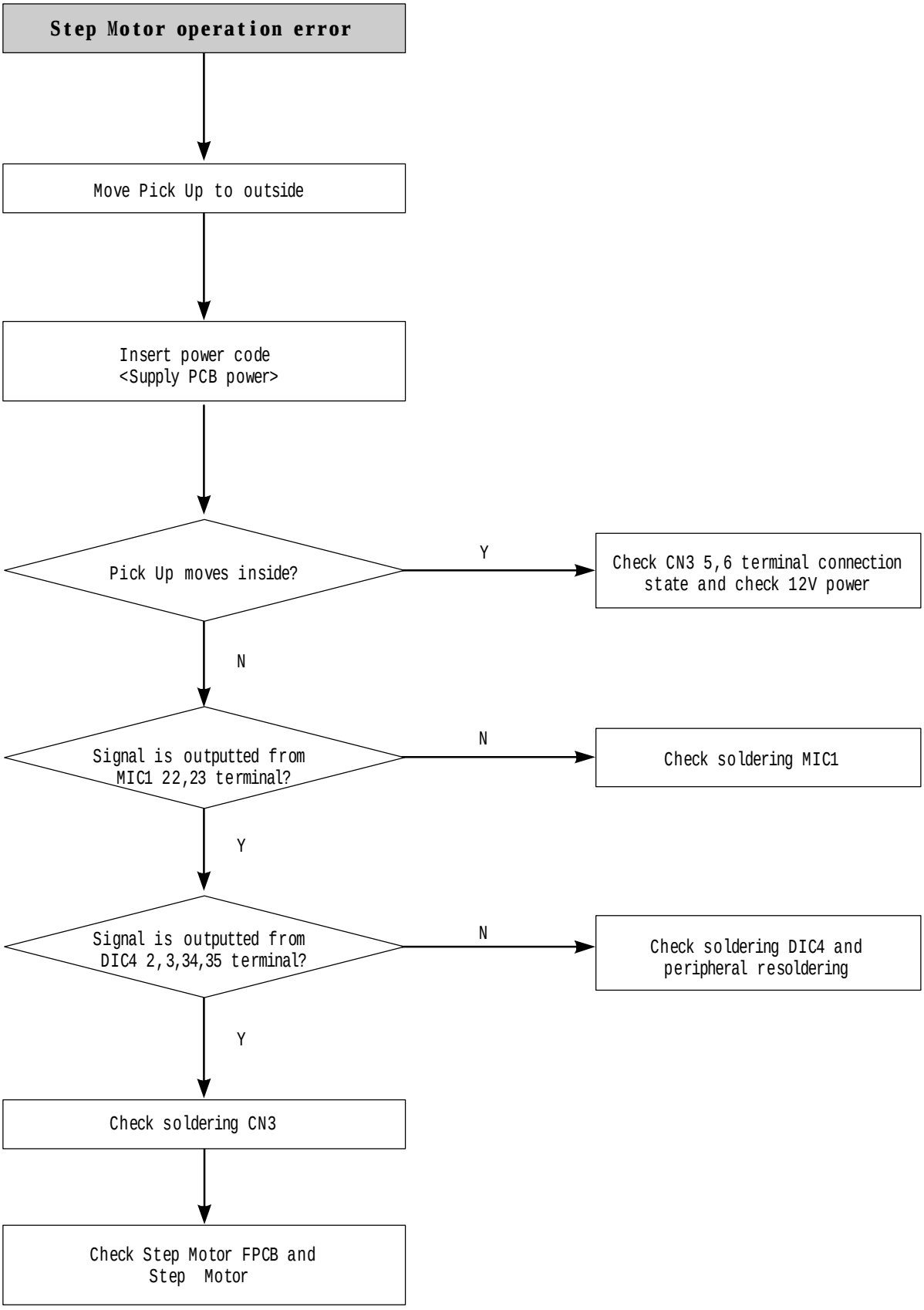
Y

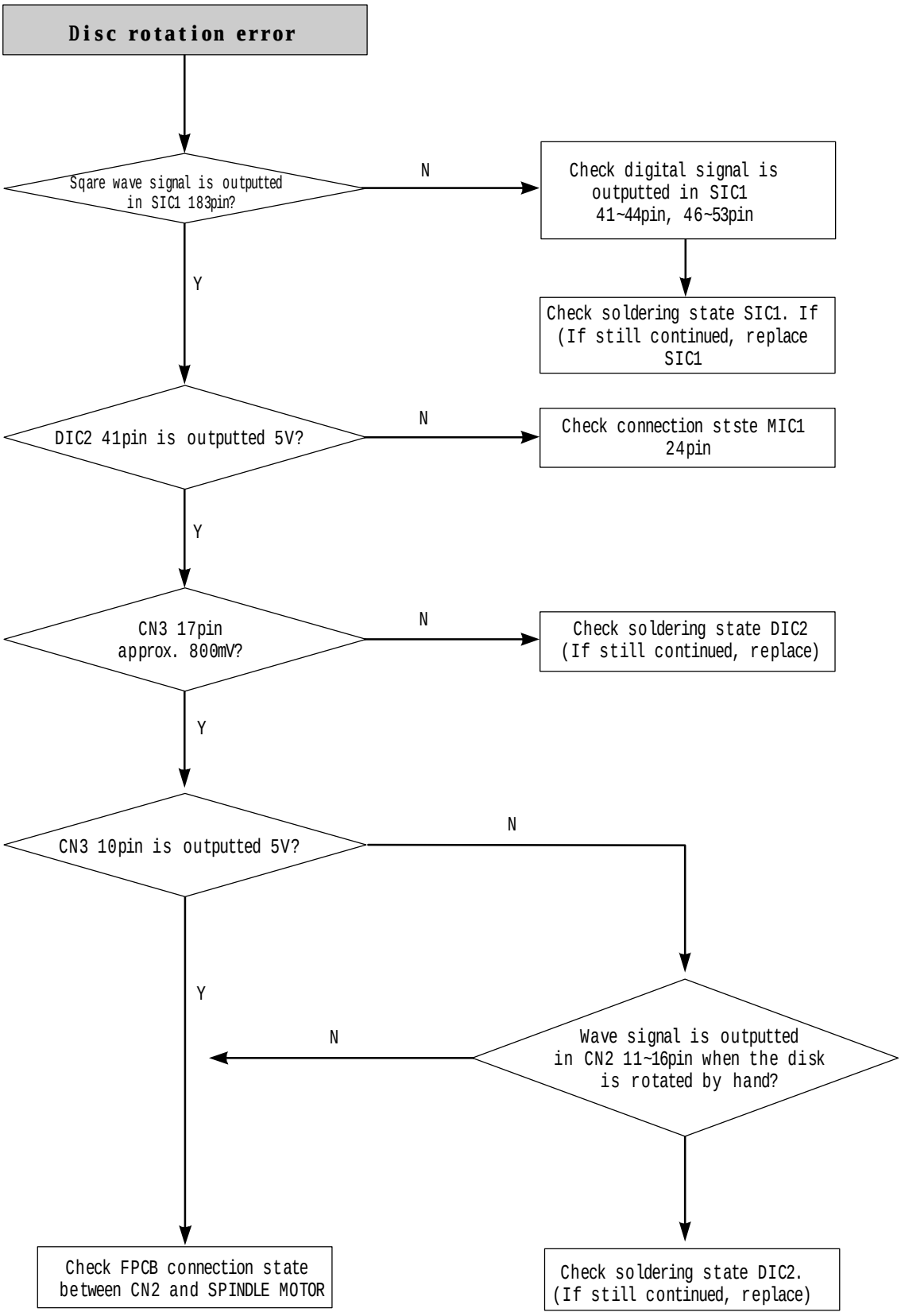
D-1

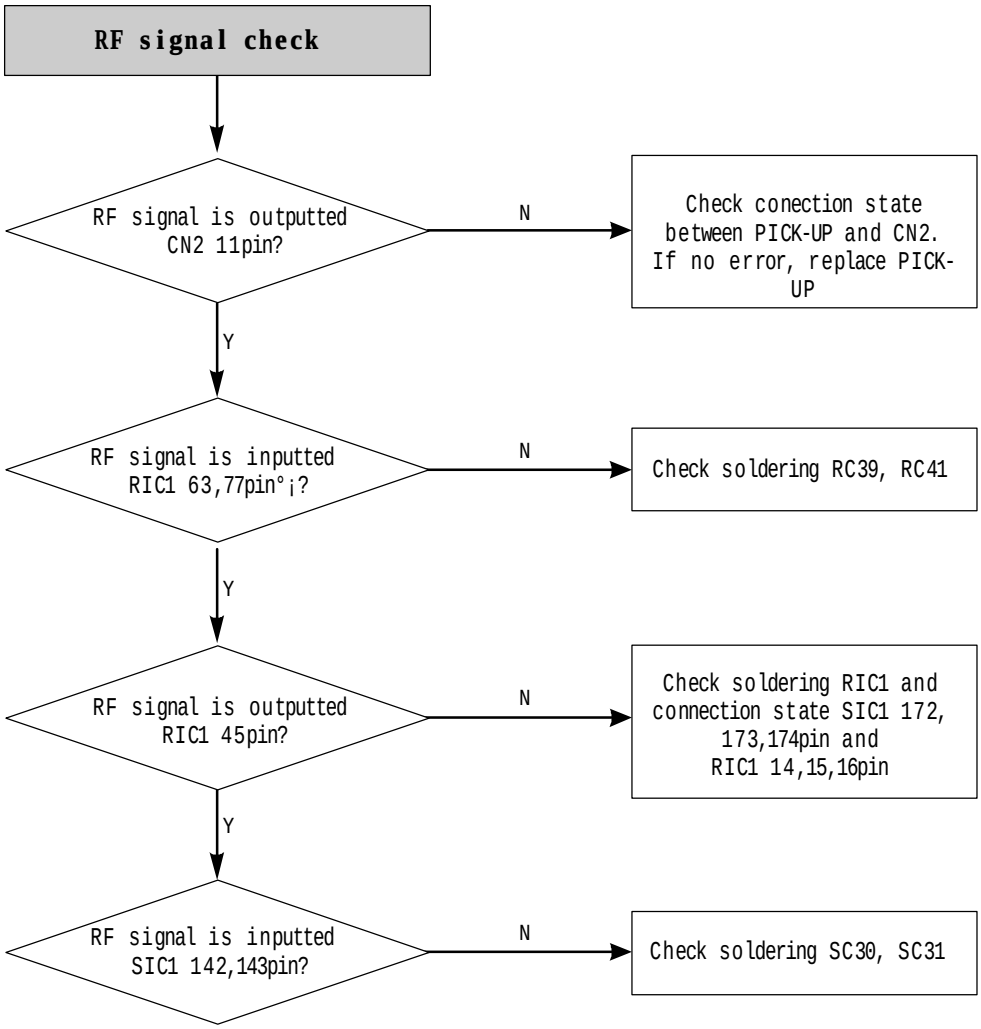

D-1
Focus up/down driving signal is outputted from DIC1,13,14pin on the basis of 2.5V?
N
Check DR3,DR4,DIC1 soldering For no error, replace DICI
Y
Pattern between CN2 2,3pin and DICI13,14 pin and connection state between CN2 and FPC B of Pick-up is normal?
N
Reconnect after removing Pick-up FPCB and CN2
Y
Resistance between 2 and 3 pin is about 5.3§Ùafter removing FPCB connected with Pick-up from CN2 connector?
N
Replace Pick-up
Y
For no error in focus actuator, check connection of FPC B and CN2 connector

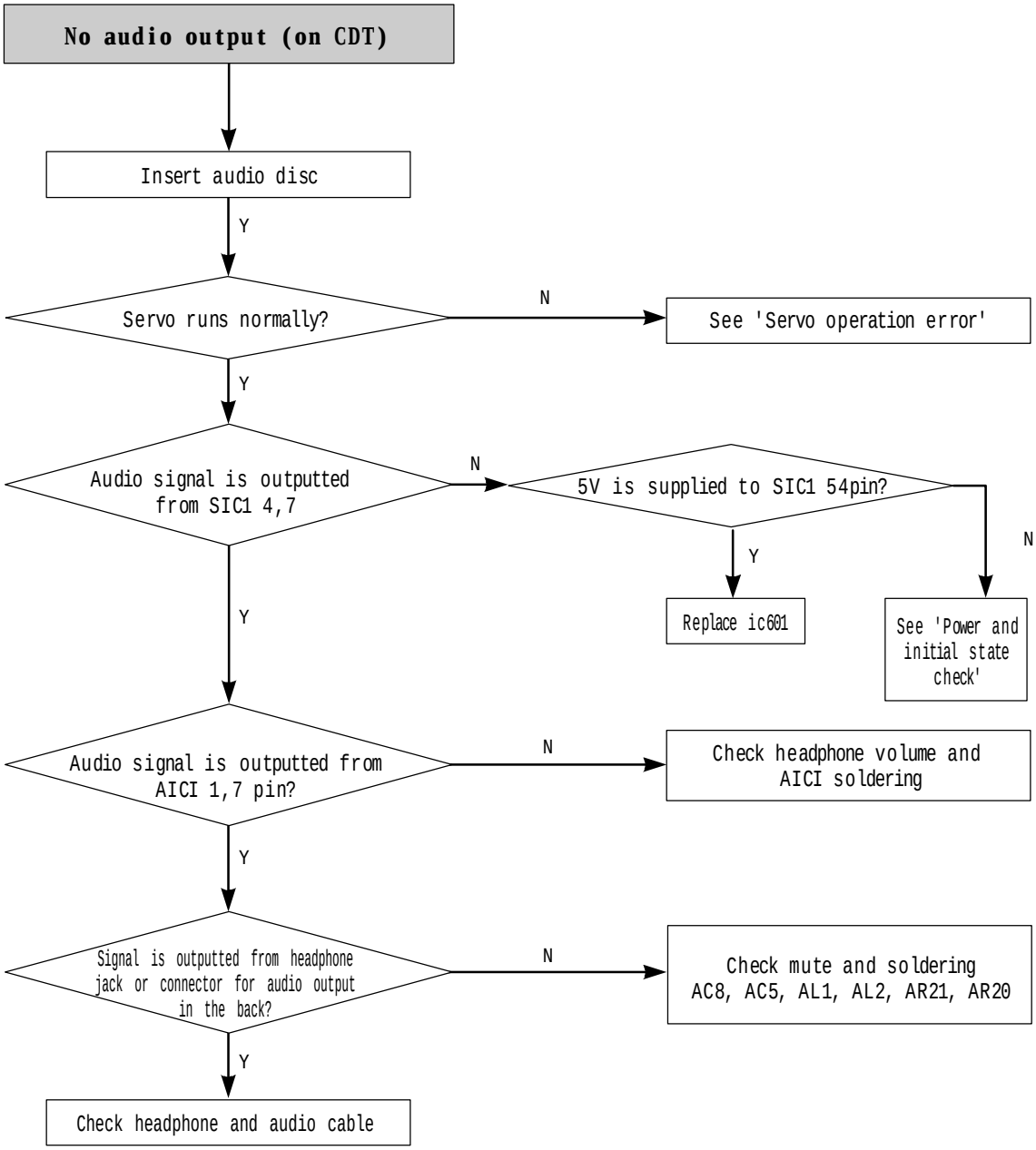

E
Check SIC1 150pin signal(Focus S-curve)
N
<For DVD>
A,B,C,D signal is inputted normally in RIC1 67,68,69,70 pin?
N
Y
RR10,RC20,SR65 soldering lf still continued, replace IC101
2V 2V..
N
<For CD family>
A,B,C,D input are normal in RIC1 72,73,74,75pin?
N
Y
Check RR9,RR9A,RC18,RC19 soldering lf still continued, replace RIC1
Y
RFSB signal goes up normally when SIC1 152 pin is focused on?
N
Check RIC1,SIC1 soldering
N
Replace RIC1
1V
Y
Digital signal is normally inputted in SIC1 41,42,43, 44,46,47,48,49,50,51,52,53pin?
N
See 'Power and initial state check'
Y
Replace SIC1. lf error is continued, replace Pick-up
Check Pick-up connection and FPCB contact lf still continued, replace Pick-up

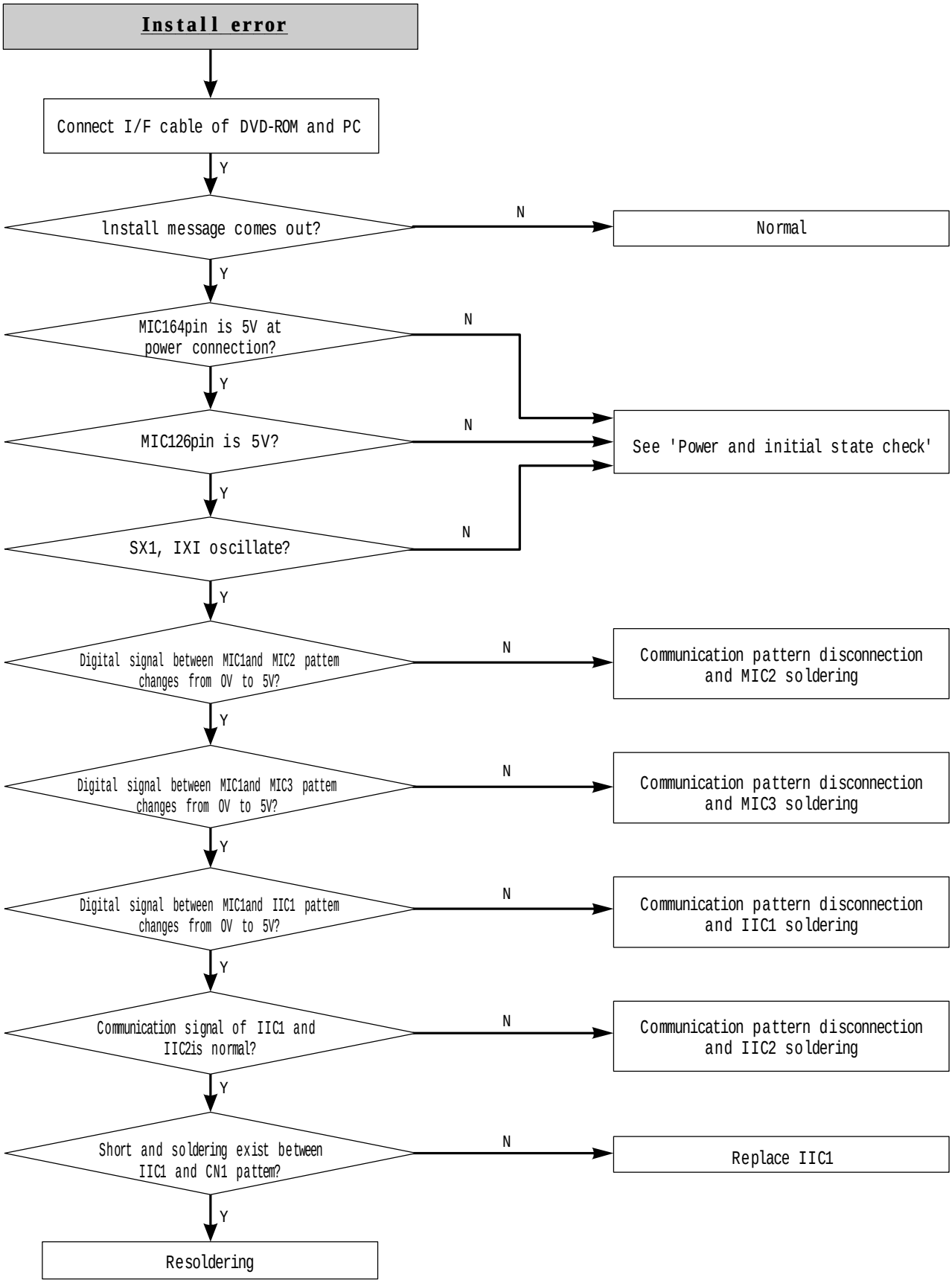

F
Sqare wave signal is inputted in DIC2 39pin at spindle motor rotation?
Check DIC2 peripheral soldering If still continued, replace DIC2.
Y
sgare wave signdl is inputted in SIC1 175pin at spindle motor rotation?
N
Check SIC1 peripheral soldering
Y
SIC1 38pin goes down from 0V to 5V after MIC1 5pin is focused on?
N
Check pattem and soldering between MIC1 5pin and SIC1 38pin
Y
Replace SIC1
Y
RF signal inputted in SIC1 142pin
See' RF signal check'
N
Y
Check soldering around SC30, SC31
Y
lf still continued, replace RIC1


Step Motor operation error
Move Pick Up to outside
Insert power code
<Supply PCB power>
Pick Up moves inside?
Y
Check CN3 5,6 terminal connection state and check 12V power
N
Signal is outputted from MIC1 22,23 terminal?
N
Check soldering MIC1
Y
Signal is outputted from DIC4 2,3,34,35 terminal?
N
Check soldering DIC4 and peripheral resoldering
Y
Check soldering CN3
Check Step Motor FPCB and Step Motor


Disc rotation error
Sqare wave signal is outputted in SIC1 183pin?
N
Check digital signal is outputted in SIC1 41~44pin, 46~53pin
Y
Check soldering state SIC1. If (If still continued, replace SIC1
DIC2 41pin is outputted 5V?
N
Check connection stste MIC1 24pin
Y
CN3 17pin approx. 800mV?
N
Check soldering state DIC2 (If still continued, replace)
Y
CN3 10pin is outputted 5V?
N
Y
Wave signal is outputted in CN2 11~16pin when the disk is rotated by hand?
N
Check FPCB connection state between CN2 and SPINDLE MOTOR
Check soldering state DIC2. (If still continued, replace)


RF signal check
RF signal is outputted CN2 11pin?
N
Check conection state between PICK-UP and CN2. If no error, replace PICK-UP
Y
RF signal is inputted RIC1 63,77pin°¡?
N
Check soldering RC39, RC41
Y
RF signal is outputted RIC1 45pin?
N
Check soldering RIC1 and connection state SIC1 172, 173,174pin and RIC1 14,15,16pin
Y
RF signal is inputted SIC1 142,143pin?
N
Check soldering SC30, SC31


No audio output (on CDT)
Insert audio disc
Y
Servo runs normally?
N
See 'Servo operation error'
Y
Audio signal is outputted from SIC1 4,7
N
5V is supplied to SIC1 54pin?
Y
N
Replace ic601
See 'Power and initial state check'
Y
Audio signal is outputted from AICI 1,7 pin?
N
Check headphone volume and AICI soldering
Y
Signal is outputted from headphone jack or connector for audio output in the back?
N
Check mute and soldering AC8, AC5, AL1, AL2, AR21, AR20
Y
Check headphone and audio cable

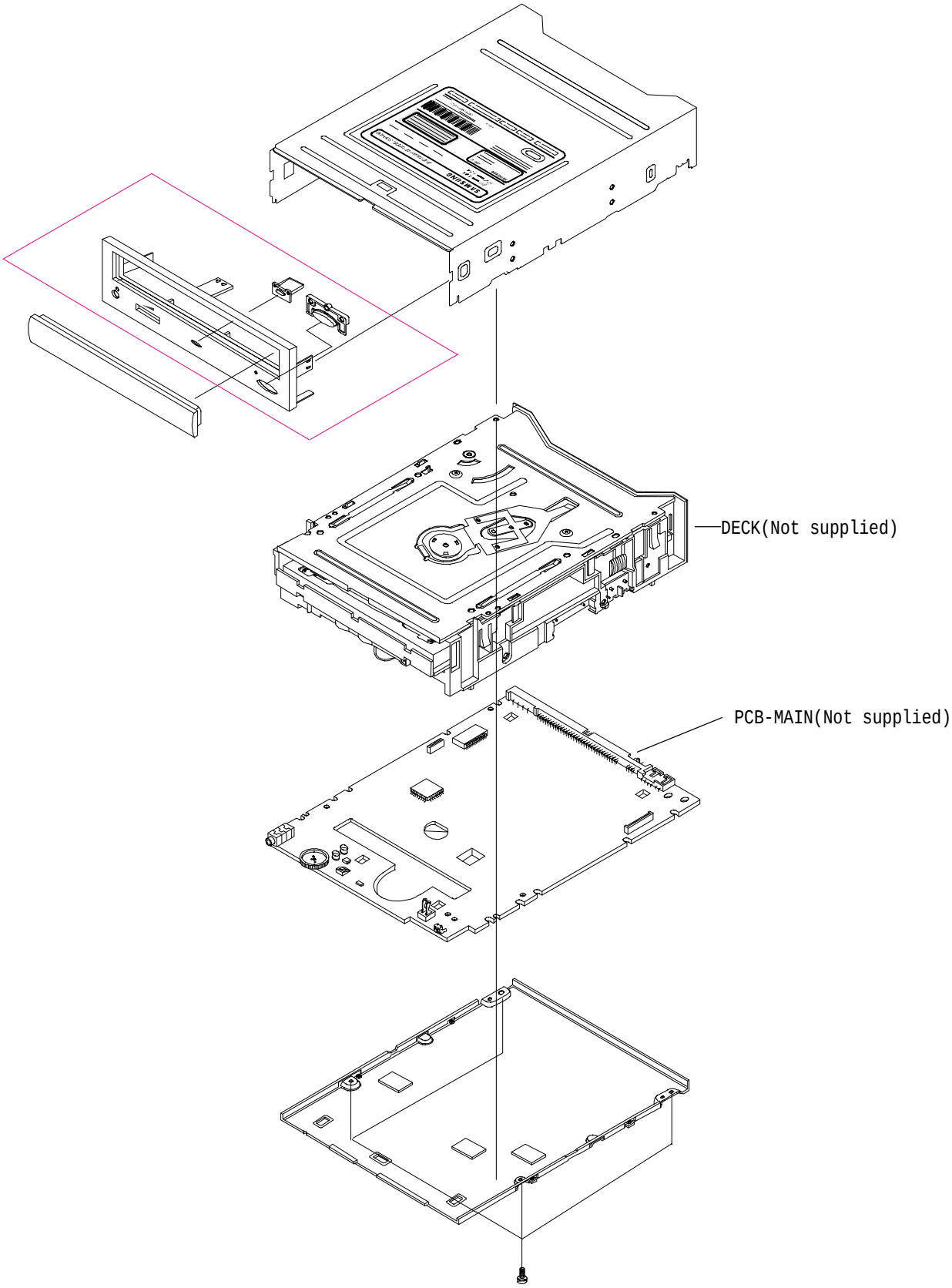

Install error
Connect I/F cable of DVD-ROM and PC
Y
lnstall message comes out?
N
Normal
Y
MIC164pin is 5V at power connection?
N
Y
MIC126pin is 5V?
N
See 'Power and initial state check'
Y
SX1, IXI oscillate?
N
Y
Digital signal between MIC1and MIC2 pattem changes from OV to 5V?
N
Communication pattern disconnection and MIC2 soldering
Y
Digital signal between MIC1and MIC3 pattem changes from OV to 5V?
N
Communication pattern disconnection and MIC3 soldering
Y
Digital signal between MIC1and IIC1 pattem changes from OV to 5V?
N
Communication pattern disconnection and IIC1 soldering
Y
Communication signal of IIC1 and IIC2is normal?
N
Communication pattern disconnection and IIC2 soldering
Y
Short and soldering exist between IIC1 and CN1 pattem?
N
Replace IIC1
Y
Resoldering

6. Exploded views and parts list

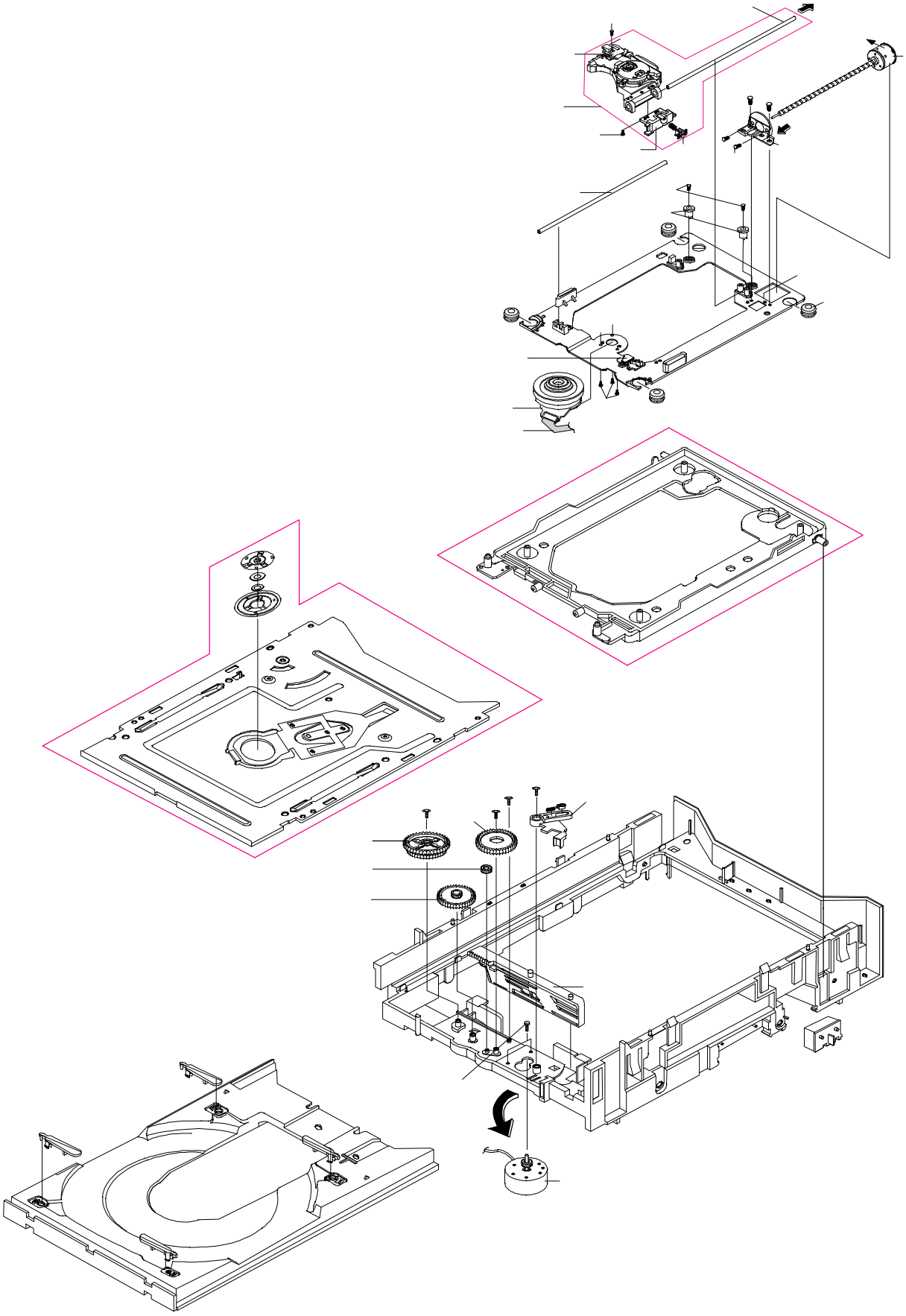
6 - 1. Entire exploded views ---------- 6 - 2

6 - 2. Deck exploded views ---------- 6 - 3

6 - 1. Entire exploded view



6 - 2. Deck exploded view



Level	CODE NO	Q'ty	Description	Spec
0	SDR-430/DOM		DVD ROM DRIVE 4X	
1	BG91-30041A	1	ASSY-COMMON	SDR-430/DOM,ASS'Y-COMMON
2	AC60-10056A	4	SCREW-TAPPING	PH, -, -, M3, L8, FZY
2	BG63-30030A	1	COVER-TOP	-, SECC, -, TO.6,-,-,-,DDR-4
2	BG68-50005A	1	LABEL-QMS	SCR-830,ART PAPER,TO.1,L65,W13
2	BG92-60363A	1	ASSY DECK	SDR-430,DOM,-,-
3	AH60-10143U	4	SCREW-TAP TITE	DP,PH,+,SPEC,TAP1.7,L5,ZPC
3	AH60-10145A	4	SCREW-TAP TITE	DP,PH,+,SPEC,OD5.5 FPTAP1.7,L
3	AH61-50278A	1	SHAFT-P.U(R)	DP,SUS420J2,OD3,L87,-,NTR,DP-1
3	BG31-12007A	1	MOTOR-SPINDLE	-,12V/1.2A,60HZ
3	BG41-20050V	1	FPC-SANKYO P/U	POLYMIDE,TO.15,24P,DDR-4
3	BG60-10020A	4	SCREW-SP MOTOR	-,BHW TOOTH,-,-,M1.7,L3,-,-,-
3	BG60-12001P	1	SCREW-MACHINE	-,-,-,-,M1.7,2.5,-,-,WHT
3	BG61-20028A	1	HOLDER-FPC	-,POM,-,-,-,DDR-4
3	BG61-62001A	1	SPRING-PLATE	-,-,PBSP-1/2H,TO.15,-,-,DDR-4
3	BG95-50039A	1	ASSY-PICK-UP	SPU-3131,-,-
3	BG98-12002N	1	ASSY-MAIN CLAMP	DDR-4,-
4	BG61-20029A	2	BASE-CLAMP	-,SECC TO.6,-,-,-,DDR-4
4	BG61-60036A	2	SPRING-TENSION	-,-,SUS304 WPB,-,-,-,DDR-4
4	BG68-50133A	2	LABEL-MASKING	DDR-4,ART100G,TO.1,L37,W10,WHT
4	BG69-10111A	1	PAD-MAIN CLAMP	DDR-4,CHAMUDE,TO.6,3,3,BLK,-,-
4	BG98-12002P	1	ASSY-CLAMP	DDR-4,-
5	BG33-30001D	1	MAGNET-CLAMPER	-,-,-,-,13.5x6x1.1
5	BG61-10030A	1	BRACKET-CLAMP	-,SUS430,-,0.6,-,-,DDR-4
5	BG61-10031A	1	BRACKET-MAGNER	-,SECC,-TO.8,-,-,DDR-4
5	BG61-60037A	1	SPRING-CLAMP	-,-,SUS304 WPB,-,-,-,DDR-4
5	BG66-90013A	1	CLAMPER-UPPER	POM,-,-,-,DDR-4
5	BG66-90014A	1	CLAMPER-LOWER	POM,-,-,-,DDR-4
3	BG98-12002Q	1	ASSY-HOUSING	DDR-4,-
4	AC60-10027A	2	SCREW-MACHINE	BH,+,-,M1.7.3,FZB,SWRCH 18A,-,
4	AC60-10143A	2	SCREW-TAP TITE	DP,PH,+,SPEC,TAP1.7,L5,ZPC
4	AC60-10145A	1	SCREW-TAP TITE	DP,PH,+,SPEC,OD5.5 FP,TAP1.7,L
4	AC60-10027A	1	SCREW-TAP TITE	DP,SPEC6.8 ,PH,+,CP,M2,L5,ZPC
4	BG31-10002B	1	MOTOR-DC	-,RF-300CA-11440,2.0V-10V DC,-
4	BG60-42003A	1	RING-SPRING	-,POM(M90-44),-,-,-,-
4	BG61-10032A	1	CHASSIS-MAIN	-,ABS,-,-,-,-,DDR-4
4	BG61-10033A	1	CHASSIS-SUB	-,ABS PC-,-,-,DDR-4
4	BG61-60038A	1	SPRING-LEVER	-,-,SUS304 WPB, -,-,-,DDR-4
4	BG66-20139A	1	GEAR-MOTER	-,POM(M90-44),-,-,-,-,DDR-4
4	BG66-20140A	1	CEAR-A	-,NYLON12 PA(L-1724K),-,-,-,-,
4	BG66-20141A	1	GEAR-B	-,POM(M90-44),-,-,-,-,DDR-4
4	BG66-20142A	1	GEAR-TRAY	-,NW-O2,-,-,-,-,DDR-4
4	BG66-20143A	1	GEAR-D	-,PEBAX 7033 SNO1,-,-,-,-DDR-
4	BG66-30017A	1	LEVER-SWITCH	-,POM,-,-,-,DDR-4
4	BG66-80001A	1	SLIDER-CAM SAM	-,DURALEX 2002,-,-,-,DDR-4
3	BG98-12002R	1	ASSY-BRKT DECK M	DDR-4,-
4	AC60-10059A	4	SCREW-TAPPING	BH,+,-,1.7,X5,ZPC2
4	AC61-50278A	1	SHAFT-P.U(R)	DP,SUS420J2,OD3,L87,-,NTR,DP-1
4	BG31-12013A	1	MOTOR-FEEDING(STEP)	MSAPO20,12V/O.75A.60HZ
4	BG34-10001A	1	SWITCH-DETECTOR	-,-,DDR-4
4	BG41-20050W	1	FPC-DECK	POLYMIDE,-,-,DDR-4
4	BG60-12001P	2	SCREW-MACHINE	-,-,-,-,M1.7,2.5,-,-,WHT

Level	Item No	Q'ty	Description	Spec
4	BG61-12003A	1	BRACKET-DECK M	-,SECC+POM,DR-4
4	BG61-20030A	1	HOLDER-MOTER	-,AL DIE,-,-,-,DDR-4
4	BG61-20031A	2	HOLDER-CAM	-,POM,-,-,-,DDR-4
4	BG73-10110A	4	RUBBER-INSULATOR	-,-,DDR-4,IIR
3	BG98-12002T	1	ASSY-TRAY	DDR-4,ASS'Y TRAY
4	BG66-32004A	4	LEVER-VERTICAL	-,PC/ABS,T1.2,L26,-,DDR-4
4	BG66-90016A	1	TRAY-DISC	-,PC+ABS,-,-,-,DDR-4
3	BG98-12002U	1	ASSY-SLIDER STEP	DDR-4,ASS'Y SLIDER STEP
4	BG61-20032A	1	HOLDER-SLIDER	-,PC(20%),-,-,-DDR-4
4	BG61-40008A	1	STUD-STEP	-,SUS303 WPB,-,-,DDR-4
4	BG61-60039A	1	SPRING-STEP	-,-,SUS303,-,-,-,-,DDR-4
4	BG66-80002A	1	SLIDER-STEP	-,NW-O2,-,-,-,DDR-4
3	BG98-12002Y	1	ASSY-TURN TABLE ABS	DDR-4,ASS'Y TURN TABLE ABS
4	BG61-10031A	1	BRACKET-MAGNET	-,SECC,-,TO.8,-,-,DDR-4
4	BG63-32002A	1	COVER-TURN TABLE AB	-,SUS,-,TO.7,-,-,-,DDR-4
4	BG66-90017A	1	TURN-TABLE ABS	AL7075,-,-,-DDR-4
4	BG70-10315A	5	BALL-TURN TABLE ABS	-,YHD-50,-,-,DDR-4
4	BG73-10114A	1	RUBBER-TURN TABLE	CR,16,DDR-4
2	BG98-12002V	1	ASSY-COVER BOTTOM	DDR-4,ASS'Y COVER BOTTOM
3	BG63-30029A	1	COVER-BOTTOM	-,SECC,-,TO.6,-,-,-,DDR-4
3	BG73-10113A	3	RUBBER-IC	SILICON,-,TO.6,-,-,-,DDR-4
1	BG91-40117A	1	ASSY-OPTION	SDR-430/DOM,ASS'Y OPTION
2	BG64-50051A	1	DOOR-TRAY	-,ABS VO,-,-,-,-,-,DDR-4
2	BG68-50081A	0.1	LABEL-BUYER	ROM DOM,100ART,-,L20,W20,BLK,-
2	BG68-50125A	1	LABEL-RATING	SDR-430/DOM,ART PAPER,TO.1,L10
2	BG69-20327A	2	CUSHION-SET	SCR-3231/DOM,EPS,-,-,-,-,-
2	BG69-30305A	1	BAG-PE	SCR-3231,LDPE,0.05,L260,W290,-
2	BG69-40044A	0.1	MASTER CARTON-BOX	SDR-430/DOM,SW-3,W418,L532,H27
2	BG69-50026A	1	PACKING-CASE	SDR-430/DOM,SW-1,W200,L100,H25
2	BG91-10055A	1	ASSY-ACCESSORY	SDR-430,DOM
3	BG39-30002A	1	CABLE-IF	-,SR,380§®,HIF3BA-40DA-2.54R
3	BG39-42001A	1	CABLE-WRIE HARNESS	4P,3P,N,UL2547/UL1061,500MM,N,
3	BG46-30001J	1	DISC-FLOPPY	3.5INCH,-,SCR-2030
3	BG68-10026A	1	MANUAL-USERS	SDR-430,SNOW WHITE,210,150,KOR
3	BG69-30307A	1	BAG-PE	SCR-3231,LDPE ANTI,TO.0.5,L240,
3	BG95-50004A	1	ASSY-SCREW	SCR-2430,-,ASS'Y SCREW
4	BG60-12001H	4	SCREW-MACHINE	-,PH,-,-,M3,L6,ZPC(WHT),SWRCH1
4	BG69-30307A	1	BAG-PE	SCR-3231,LDPE ANTI,TO.05,L240,
2	BG98-10003J	1	ASSY-FRONT PANEL	DDR-4,ASS'Y FRONT PANEL
3	BG64-10350A	1	KNOB-EJECT	-,ABS VO,-,-,-,DDR-4
3	BG64-20047A	1	PANEL-FRONT	-,ABS VO,-,-,-,-,DDR-4
3	BG67-10314A	1	LENS-LED	-,-,ACRYL MILKY(H1855M),-,-,-,

7. Circuit parts list

Loc.No	Part No	Description & Specification	
	BG41-10077A	PCB-MAIN; SDR-430/DO, PCB-MAIN,2L, FR-4, 1	0.500
AC1	2203-002793	C-CERAMIC, CHIP; 1UF, , +80-20%, 25V, Y5V, TP, 20	1.000
AC10	2203-000189	C-CERAMIC, CHIP; 100nF, +80-20%, 25V, Y5V, TP	1.000
AC11	2404-000232	C-TA,CHIP; 4.7uF,20%,10V,WT,3216,-,TP	1.000
AC12	2404-000232	C-TA,CHIP; 4.7uF,20%,10V,WT,3216,-,TP	1.000
AC13	2404-001001	C-TA,CHIP; 10uF,10%,6.3V,GP,TP,3216,3.2§®	1.000
AC2	2203-002793	C-CERAMIC, CHIP; 1UF, , +80-20%, 25V, Y5V, TP, 20	1.000
AC3	2203-001697	C-CERAMIC, CHIP; 82pF,5%,50V,CH,TP,1608,1.	1.000
AC4	2203-001697	C-CERAMIC, CHIP; 82pF,5%,50V,CH,TP,1608,1.	1.000
AC5	2402-001009	C-AL,SMD;100UF,20%,6,3V,GP,TP,5.3X5.3X5	1.000
AC6	2404-001001	C-TA,CHIP; 10 uF,10%,6.3V,GP,TP,3216,3.2§®	1.000
AC7	2203-000189	C-CERAMIC, CHIP; 100nF,+80-20%,25V,Y5V,TP	1.000
AC8	2402-001009	C-AL,SMD;100UF,20%,6,3V,GP,TP,5.3X5.3X5	1.000
AC9	2404-000259	C-TA,CHIP; 47 uF,20%,6.3V,- ,TP,6032,-	1.000
AIC1	1201-000003	IC-AMPLIFIER;3414A,SOP,8P,DUAL,OP_AMP,CM	1.000
AL1	3301-000009	CORE-FERRITE BEAD;AB,2.0¡¿0.9§®,-,-	1.000
AL2	3301-000009	CORE-FERRITE BEAD;AB,2.0¡¿0.9§®,-,-	1.000
AR1	2007-000131	R-CHEP;91Kohm, 5%, 1/16W, DA, TP, 1608	1.000
AR13	2007-000078	R-CHEP;12Kohm, 5%, 1/16W, DA, TP, 1608	1.000
AR14	2007-000078	R-CHEP;1Kohm, 5%, 1/16W, DA, TP, 1608	1.000
AR15	2007-000091	R-CHEP;12Kohm, 5%, 1/16W, DA, TP, 1608	1.000
AR16	2007-000091	R-CHEP;12Kohm, 5%, 1/16W, DA, TP, 1608	1.000
AR2	2007-000078	R-CHEP;1 Kohm, 5%, 1/16W, DA, TP, 1608	1.000
AR20	2007-000123	R-CHEP;1.5Kohm, 5%, 1/16W, DA, TP, 1608	1.000
AR21	2007-000123	R-CHEP;1.5Kohm, 5%, 1/16W, DA, TP, 1608	1.000
AR3	2007-000131	R-CHEP;91Kohm, 5%, 1/16W, DA, TP, 1608	1.000
AR4	2007-000100	R-CHEP;68Kohm, 5%, 1/16W, DA, TP, 1608	1.000
AR5	2007-000094	R-CHEP;22Kohm, 5%, 1/16W, DA, TP, 1608	1.000
AR6	2007-000078	R-CHEP;1 Kohm, 5%, 1/16W, DA, TP, 1608	1.000
AR7	2007-000094	R-CHEP;22Kohm, 5%, 1/16W, DA, TP, 1608	1.000
AR8	2007-000100	R-CHEP;68Kohm, 5%, 1/16W, DA, TP, 1608	1.000
CN2	3708-001072	CONNECTER-FPC/FC/PIC;24P,0.5§®,SMD-S,SN	1.000
DC1	2203-000998	C-CERAMIC,CHIP;47pF,5%50V,NPO,TP,1608,-	1.000
DC10	2203-000189	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP	1.000
DC11	2203-000189	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP	1.000
DC12	2203-000189	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP	1.000
DC13	2204-001001	C-TA,CHIP;10uF,10%,6.3V,GP,TP,3216,3.2§®	1.000
DC14	2203-000189	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP	1.000
DC15	2204-000128	C-TA, CHIP;10uF,20%,16V,-,TP,6032	1.000
DC16	2203-000189	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP	1.000
DC17	2203-000189	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP	1.000
DC18	2203-000189	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP	1.000
DC1A	2203-000189	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP	1.000
DC1B	2203-000189	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP	1.000
DC1C	2203-000189	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP	1.000
DC1D	2203-000189	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP	1.000
DC2	2203-000189	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP	1.000
DC21	2203-000783	C-CERAMIC,CHIP;330pF,5%,50V,NPO,TP,1608	1.000
DC25	2203-000888	C-CERAMIC,CHIP;4.7nF,10%,50V,X7R,TP,1608	1.000
DC26	2404-000128	C-TA,CHIP;10uF,20%,16V,-,TP,6032,-	1.000
DC27	2203-000998	C-CERAMIC,CHIP;47pF,5%,50V,NPO,TP,1608,-	1.000
DC3	2404-001001	C-TA,CHIP;10uF,10%,6.3V,GP,TP,3216,3.2§®	1.000

Loc.No	Part No	Description & Specfication	
DC4	2203-000189	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP	1.000
DC5	2404-000128	C-TA,CHIP;10uF,20%,16V,-,TP,6032,-	1.000
DC6	2203-000189	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP	1.000
DC7	2203-000189	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP	1.000
DC8	2203-000189	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP	1.000
DC9	2203-000189	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP	1.000
DIC1	1003-001178	IC-MOTOR DRIVER;BA5983FP,HSOP,28P,300MIL	1.000
DIC2	1003-001176	IC-MOTOR DRIVER;M56784FP,SSOP,42P,450MIL	1.000
DIC4	1003-001177	IC-MOTOR DRIVER;M54678FP,SSOP,36P,450MIR	1.000
DR1	2007-000170	R-CHIP;0 ohm,5%,1/16W,DA,TP,1608	1.000
DR10A	2007-000309	R-CHIP;10ohm,5%,1/16W,DA,TP,1608	1.000
DR11A	2007-000309	R-CHIP;10ohm,5%,1/16W,DA,TP,1608	1.000
DR12A	2007-000309	R-CHIP;10ohm,5%,1/16W,DA,TP,1608	1.000
DR13A	2007-000309	R-CHIP;10ohm,5%,1/16W,DA,TP,1608	1.000
DR14A	2007-000070	R-CHIP; 0ohm,5%,1/16W,DA,TP,1608	1.000
DR15	2007-000090	R-CHIP;10Kohm,5%,1/16W,DA,TP,1608	1.000
DR16	2007-000084	R-CHIP;4.7Kohm,5%,1/16W,DA,TP,1608	1.000
DR16A	2007-000070	R-CHIP; 0ohm,5%,1/16W,DA,TP,1608	1.000
DR17	2007-000096	R-CHIP;30Kohm,5%,1/16W,DA,TP,1608	1.000
DR17A	2007-000070	R-CHIP; 0ohm,5%,1/16W,DA,TP,1608	1.000
DR18	2007-000431	R-CHIP;10ohm,5%,1/16W,DA,TP,1608	1.000
DR18A	2007-000070	R-CHIP;4.7Kohm,5%,1/16W,DA,TP,1608	1.000
DR19	2007-000078	R-CHIP;1Kohm,5%,1/16W,DA,TP,1608	1.000
DR2	2007-000130	R-CHIP;39Kohm,5%,1/16W,DA,TP,1608	1.000
DR20	2007-000078	R-CHIP;1Kohm,5%,1/16W,DA,TP,1608	1.000
DR21	2007-000036	R-CHIP; 2ohm,5%,1/ 8W,DA,TP,3216	1.000
DR22	2007-000036	R-CHIP; 2ohm,5%,1/ 8W,DA,TP,3216	1.000
DR23	2007-000036	R-CHIP; 2ohm,5%,1/ 8W,DA,TP,3216	1.000
DR24	2007-000036	R-CHIP; 2ohm,5%,1/ 8W,DA,TP,3216	1.000
DR27	2007-000097	R-CHIP;47Kohm,5%,1/16W,DA,TP,1608	1.000
DR28	2007-000097	R-CHIP;47Kohm,5%,1/16W,DA,TP,1608	1.000
DR29	2007-000075	R-CHIP;220ohm,5%,1/16W,DA,TP,1608	1.000
DR3	2007-000101	R-CHIP;82K0ohm,5%,1/16W,DA,TP,1608	1.000
DR30	2007-000075	R-CHIP;220ohm,5%,1/16W,DA,TP,1608	1.000
DR34	2007-000070	R-CHIP;0ohm,5%,1/16W,DA,TP,1608	1.000
DR35	2007-000070	R-CHIP;0ohm,5%,1/16W,DA,TP,1608	1.000
DR35A	2007-000070	R-CHIP;0ohm,5%,1/16W,DA,TP,1608	1.000
DR35B	2007-000070	R-CHIP;0ohm,5%,1/16W,DA,TP,1608	1.000
DR37	2007-000070	R-CHIP;0ohm,5%,1/16W,DA,TP,1608	1.000
DR4	2007-000101	R-CHIP;82Kohm,5%,1/16W,DA,TP,1608	1.000
DR42	2007-000070	R-CHIP;0ohm,5%,1/16W,DA,TP,1608	1.000

Loc.No	Part No	Description & Specfication	
DR43	2007-000070	R-CHIP;0ohm,5%,1/16W,DA,TP,1608	1.000
DR44	2007-000070	R-CHIP;0ohm,5%,1/16W,DA,TP,1608	1.000
DR45	2007-000036	R-CHIP;2ohm,5%,1/8W,DA,TP,3216	1.000
DR46	2007-000036	R-CHIP;2ohm,5%,1/ 8W,DA,TP,3216	1.000
DR47	2007-000090	R-CHIP;10Kohm,5%,1/16W,DA,TP,1608	1.000
DR48	2007-000090	R-CHIP;10Kohm,5%,1/16W,DA,TP,1608	1.000
DR49	2007-000084	R-CHIP;4.7Kohm,5%,1/16W,DA,TP,1608	1.000
DR5	2007-000965	R-CHIP;5.1Kohm,5%,1/8W,DA,TP,3216	1.000
DR50	2007-000123	R-CHIP;1.5Kohm,5%,1/ 8W,DA,TP,3216	1.000
DR51	2007-000087	R-CHIP;6.8Kohm,5%,1/16W,DA,TP,1608	1.000
DR53	2007-000090	R-CHIP;10Kohm,5%,1/16W,DA,TP,1608	1.000
DR54	2007-000090	R-CHIP;10Kohm,5%,1/16W,DA,TP,1608	1.000
DR55	2007-000036	R-CHIP;2ohm,5%,1/8W,DA,TP,3216	1.000
DR56	2007-000036	R-CHIP;2ohm,5%,1/ 8W,DA,TP,3216	1.000
DR57	2007-000070	R-CHIP; 0ohm,5%,1/16W,DA,TP,1608	1.000
DR58	2007-000070	R-CHIP; 0ohm,5%,1/16W,DA,TP,1608	1.000
DR59	2007-000070	R-CHIP; 0ohm,5%,1/16W,DA,TP,1608	1.000
DR6	2007-000091	R-CHIP; 12Kohm,5%,1/16W,DA,TP,1608	1.000
DR60	2007-000070	R-CHIP; 0ohm,5%,1/16W,DA,TP,1608	1.000
DR61	2007-000029	R-CHIP; 0ohm,5%,1/10W,DA,TP,2012	1.000
DR63	2007-000033	R-CHIP; 0ohm,5%,1/10W,DA,TP,3216	1.000
DR8	2007-000091	R-CHIP; 0ohm,5%,1/16W,DA,TP,1608	1.000
IC1	2203-000189	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,.	1.000
IC10	2203-000189	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,.	1.000
IC11	2203-000189	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,.	1.000
IC12	2203-000189	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,.	1.000
IC13	2203-000189	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,.	1.000
IC15	2203-000552	C-CERAMIC,CHIP; 20pF,5%,50V,NPO,TP,1608,-.	1.000
IC16	2203-000552	C-CERAMIC,CHIP; 20pF,5%,50V,NPO,TP,1608,-	1.000
IC17	2203-000041	C-CERAMIC,CHIP;10pF,0.25pF,50V,NPO,TP,16	1.000
IC18	2203-000793	C-CERAMIC,CHIP;1uF, +80-20%,25V,Y5V,TP,20	1.000
IC2	2203-000189	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,.	1.000
IC3	2203-000189	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,.	1.000
IC4	2203-000626	C-CERAMIC,CHIP;22pF,5%,50V,NPO,TP,1608,-.	1.000
IC5	2203-000626	C-CERAMIC,CHIP;22pF,5%,50V,NPO,TP,1608,-.	1.000
IC6	2203-000189	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP.	1.000
IC7	2203-000189	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,.	1.000
IC8	2203-000189	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,.	1.000
IC9	2203-000236	C-CERAMIC,CHIP;100pF, 5%,50V,NPO,TP,1608,	1.000
ID1	0407-000114	DIODE-ARRAY;DAN202K,80V,100mA,CA2-3,SOT-.	1.00
IIC1	BG13-10001C	IC-ASIC;-,TC9469F,QFP,144P,ATAPI	1.000

Loc.No	Part No	Description & Specfication	
IIC2	1105-001135	IC-DRAM;416C254,256Kx16BIT,SOJ,40P,400	1.000
IIC3	0801-000001	IC-CMOS LOGIC;74HCO8,AND GATE,SOP,14P,400	1.000
IIC5	1203-001005	IC-VOR. DETECTOR;61AC3502,SOT-23,3P,63MI	1.000
IR2	2007-000072	R-CHIP;4.7Kohm;5%,1/16W,DA,TP,1608	1.000
IR24	2007-000072	R-CHIP;47ohm,5%,1/16W,DA,TP,1608	1.000
IR25	2007-000072	R-CHIP;47ohm,5%,1/16W,DA,TP,1608	1.000
IR26	2007-000072	R-CHIP;47ohm,5%,1/16W,DA,TP,1608	1.000
IR27	2007-000072	R-CHIP;47ohm,5%,1/16W,DA,TP,1608	1.000
IR28	2007-000072	R-CHIP;47ohm,5%,1/16W,DA,TP,1608	1.000
IR29	2007-000072	R-CHIP;47ohm,5%,1/16W,DA,TP,1608	1.000
IR2A	2007-000070	R-CHIP;0ohm,5%,1/16W,DA,TP,1608	1.000
IR3	2007-000097	R-CHIP;47ohm,5%,1/16W,DA,TP,1608	1.000
IR30	2007-000072	R-CHIP;47ohm,5%,1/16W,DA,TP,1608	1.000
IR31	2007-000072	R-CHIP;47ohm,5%,1/16W,DA,TP,1608	1.000
IR32	2007-000072	R-CHIP;47ohm,5%,1/16W,DA,TP,1608	1.000
IR33	2007-000072	R-CHIP;47ohm,5%,1/16W,DA,TP,1608	1.000
IR34	2007-000072	R-CHIP;47ohm,5%,1/16W,DA,TP,1608	1.000
IR35	2007-000072	R-CHIP;47ohm,5%,1/16W,DA,TP,1608	1.000
IR36	2007-000072	R-CHIP;47ohm,5%,1/16W,DA,TP,1608	1.000
IR37	2007-000072	R-CHIP;47ohm,5%,1/16W,DA,TP,1608	1.000
IR38	2007-000072	R-CHIP;47ohm,5%,1/16W,DA,TP,1608	1.000
IR39	2007-000072	R-CHIP;47ohm,5%,1/16W,DA,TP,1608	1.000
IR4	2007-000070	R-CHIP;0ohm,5%,1/16W,DA,TP,1608	1.000
IR40	2007-000071	R-CHIP;22ohm,5%,1/16W,DA,TP,1608	1.000
IR41	2007-0000115	R-CHIP;82ohm,5%,1/16W,DA,TP,1608	1.000
IR42	2007-000115	R-CHIP;82ohm,5%,1/16W,DA,TP,1608	1.000
IR43	2007-000070	R-CHIP;0ohm,5%,1/16W,DA,TP,1608	1.000
IR44	2007-000115	R-CHIP;82ohm,5%,1/16W,DA,TP,1608	1.000
IR45	2007-000071	R-CHIP;22ohm,5%,1/16W,DA,TP,1608	1.000
IR46	2007-000070	R-CHIP;0ohm,5%,1/16W,DA,TP,1608	1.000
IR47	2007-000115	R-CHIP;82ohm,5%,1/16W,DA,TP,1608	1.000
IR48	2007-000070	R-CHIP;0ohm,5%,1/16W,DA,TP,1608	1.000
IR49	2007-000115	R-CHIP;82ohm,5%,1/16W,DA,TP,1608	1.000
IR5	2007-000084	R-CHIP;4.7Kohm,5%,1/16W,DA,TP,1608	1.000
IR50	2007-000115	R-CHIP;82ohm,5%,1/16W,DA,TP,1608	1.000
IR51	2007-000115	R-CHIP;82ohm,5%,1/16W,DA,TP,1608	1.000
IR52	2007-000115	R-CHIP;82ohm,5%,1/16W,DA,TP,1608	1.000
IR53	2007-000115	R-CHIP;82ohm,5%,1/16W,DA,TP,1608	1.000
IR54	2007-000090	R-CHIP;10Kohm,5%,1/16W,DA,TP,1608	1.000
IR57	2007-000090	R-CHIP;10Kohm,5%,1/16W,DA,TP,1608	1.000
IR58	2007-000122	R-CHIP;1.2Kohm,5%,1/16W,DA,TP,1608	1.000

Loc.No	part No	Description & Specfication	
IR59	2007-000090	R-CHIP; 10Kohm, 5%, 1/16W, DA, TP, 1608	1.000
IR6	2007-000090	R-CHIP; 10Kohm, 5%, 1/16W, DA, TP, 1608	1.000
IR60	2007-000090	R-CHIP; 10Kohm, 5%, 1/16W, DA, TP, 1608	1.000
IR61	2007-000072	R-CHIP; 47Kohm, 5%, 1/16W, DA, TP, 1608	1.000
IR62	2007-000070	R-CHIP; 0Kohm, 5%, 1/16W, DA, TP, 1608	1.000
IR63	2007-000070	R-CHIP; 0Kohm, 5%, 1/16W, DA, TP, 1608	1.000
IR64	2007-000070	R-CHIP; 0Kohm, 5%, 1/16W, DA, TP, 1608	1.000
IR65	2007-000070	R-CHIP; 0Kohm, 5%, 1/16W, DA, TP, 1608	1.000
IR66	2007-000097	R-CHIP; 47Kohm, 5%, 1/16W, DA, TP, 1608	1.000
IR67	2007-000097	R-CHIP; 47Kohm, 5%, 1/16W, DA, TP, 1608	1.000
IR7	2007-000074	R-CHIP; 10Kohm, 5%, 1/16W, DA, TP, 1608	1.000
IR70	2007-000071	R-CHIP; 22Kohm, 5%, 1/16W, DA, TP, 1608	1.000
IR71	2007-000071	R-CHIP; 22Kohm, 5%, 1/16W, DA, TP, 1608	1.000
IR72	2007-000071	R-CHIP; 22Kohm, 5%, 1/16W, DA, TP, 1608	1.000
IR73	2007-000071	R-CHIP; 22Kohm, 5%, 1/16W, DA, TP, 1608	1.000
IR74	2007-000071	R-CHIP; 22Kohm, 5%, 1/16W, DA, TP, 1608	1.000
IR76	2007-000096	R-CHIP; 30Kohm, 5%, 1/16W, DA, TP, 1608	1.000
IR77	2007-000093	R-CHIP; 20Kohm, 5%, 1/16W, DA, TP, 1608	1.000
IR8	2007-000090	R-CHIP; 10Kohm, 5%, 1/16W, DA, TP, 1608	1.000
IX1	2802-001046	RSONATOR-CERAMIC; 50MHz, 0.5%, TP, 3.7x3.1x	1.000
MC1	2203-000189	C-CERAMIC, CHIP;100nF, +80-20%, 25V, Y5V, TP,	1.000
MC10	2203-000189	C-CERAMIC, CHIP;100nF, +80-20%, 25V, Y5V, TP,	1.000
MC11	2203-000189	C-CERAMIC, CHIP;100nF, +80-20%, 25V, Y5V, TP,	1.000
MC12	2203-000189	C-CERAMIC, CHIP;100nF, +80-20%, 25V, Y5V, TP,	1.000
MC13	2203-000189	C-CERAMIC, CHIP;100nF, +80-20%, 25V, Y5V, TP,	1.000
MC14	2203-000189	C-CERAMIC, CHIP;100nF, +80-20%, 25V, Y5V, TP,	1.000
MC15	2203-000189	C-CERAMIC, CHIP;100nF, +80-20%, 25V, Y5V, TP,	1.000
MC16	2203-000189	C-CERAMIC, CHIP;100nF, +80-20%, 25V, Y5V, TP,	1.000
MC17	2203-000189	C-CERAMIC, CHIP;100nF, +80-20%, 25V, Y5V, TP,	1.000
MC18	2203-000189	C-CERAMIC, CHIP;100nF, +80-20%, 25V, Y5V, TP,	1.000
MC2	2203-000874	C-CERAMIC, CHIP;3pF, 0.25pF, 50V, NPO, 2012, -	1.000
MC20	2203-000189	C-CERAMIC, CHIP;100nF, +80-20%, 25V, Y5V, TP,	1.000
MC4	2203-001083	C-CERAMIC, CHIP;5pF, 0.1nF, 50V, NPO, TP, 1608	1.000
MC5	2203-001083	C-CERAMIC, CHIP;5pF, 0.1nF, 50V, NPO, TP, 1608	1.000
MC7	2404-001001	C-TA, CHIP;10uF, 10%, 6.3V, GP, TP, 3216, 3.2§®	1.000
MC8	2203-000189	C-CERAMIC, CHIP;100nF, +80-20%, 25V, Y5V, TP,	1.000
MC9	2203-000189	C-CERAMIC, CHIP;100nF, +80-20%, 25V, Y5V, TP,	1.000
MIC1	0903-000006	IC-MICROCOMPUTER; 88C4400, 8BIT, QFP, 80P, -,	1.000
MIC2	0801-000784	IC-CMOS LOGIC; 74HC374, D FLIP-FLOP, SOP, 20	1.000
MIC3	3704-000249	SOCKET-IC; 32P, PLCC, SN,1.27§®	1.000
MIC4	1103-001050	IC-EEPROM; 29EE512, 64Kx8BIT, PLCC, 32P, -, 90	1.000

Loc.No	Part No	Description & Specfication	
MIC5	0801-000411	IC-CMOS LOGIC;74HC32,OR GATE,SOP,14P,150	1.000
MIC6	0801-000411	IC-CMOS LOGIC;74HC32,OR GATE,SOP,14P,150	1.000
MIC7	AH14-10004R	IC-:M74HCUO4, SOP,TAPE,14	1.000
MIC9	0801-000411	IC-CMOS LOGIC;74HC32,OR GATE,SOP,14P,150	1.000
MLED1	0801-000005	LED;CHIP,GRN,1.6x2.3m,563nm	1.000
MR1	2007-000084	R-CHIP;4.7Kohm,5%,1/16W,DA,TP,1608	1.000
MR10	2007-000084	R-CHIP;4.7Kohm,5%,1/16W,DA,TP,1608	1.000
MR11	2007-000084	R-CHIP;4.7Kohm,5%,1/16W,DA,TP,1608	1.000
MR12	2007-000084	R-CHIP;4.7Kohm,5%,1/16W,DA,TP,1608	1.000
MR13	2007-000084	R-CHIP;4.7Kohm,5%,1/16W,DA,TP,1608	1.000
MR14	2007-000084	R-CHIP;4.7Kohm,5%,1/16W,DA,TP,1608	1.000
MR15	2007-000075	R-CHIP;220ohm,5%,1/16W,DA,TP,1608	1.000
MR16	2007-000102	R-CHIP;10Kohm,5%,1/16W,DA,TP,1608	1.000
MR17	2007-000084	R-CHIP;4.7Kohm,5%,1/16W,DA,TP,1608	1.000
MR18	2007-000084	R-CHIP;4.7Kohm,5%,1/16W,DA,TP,1608	1.000
MR2	2007-000084	R-CHIP;4.7Kohm,5%,1/16W,DA,TP,1608	1.000
MR20	2007-000070	R-CHIP;0ohm,5%,1/16W,DA,TP,1608	1.000
MR22	2007-000090	R-CHIP;10Kohm,5%,1/16W,DA,TP,1608	1.000
MR23	2007-000090	R-CHIP;10Kohm,5%,1/16W,DA,TP,1608	1.000
MR24	2007-000090	R-CHIP;10Kohm,5%,1/16W,DA,TP,1608	1.000
MR25	2007-000090	R-CHIP;10Kohm,5%,1/16W,DA,TP,1608	1.000
MR3	2007-000084	R-CHIP;4.7Kohm,5%,1/16W,DA,TP,1608	1.000
MR3A	2007-000070	R-CHIP;0ohm,5%,1/16W,DA,TP,1608	1.000
MR4	2007-000078	R-CHIP;1Kohm,5%,1/16W,DA,TP,1608	1.000
MR6	2007-000070	R-CHIP;0Kohm,5%,1/16W,DA,TP,1608	1.000
MR6A	2007-000070	R-CHIP;0Kohm,5%,1/16W,DA,TP,1608	1.000
MR7	2007-000084	R-CHIP;4.7Kohm,5%,1/16W,DA,TP,1608	1.000
MR9	2007-000084	R-CHIP;4.7Kohm,5%,1/16W,DA,TP,1608	1.000
MX1	2007-000068	RESONATOR-CERAMIC;20%,6.3V,-,TP,6032,-	1.000
PC1	2402-001009	C-AL,SMD;100UF,20%,6.3V,GP,TP,5.3X5.3X5	1.000
PC10	2404-000259	C-TA,CHIP;47uF,20%,6.3V,-,TP,6032,-	1.000
PC2	2403-001630	C-CERAMIC,CHIP;330nF,+80-20%,6V.Y5V,TP,	1.000
PC3	2402-000189	C-CERAMIC100nF80-20%,25V,Y5V,TP	1.000
PC4	2403-000259	C-TA,CHIP;47uF,20%,6.3V,-,TP,6032,-	1.000
PC5	2402-001009	C-AL,SMD;100UF,20%,6.3V,GP,TP,5.3X5.3X5	1.000
PC6	2403-000189	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP	1.000
PC7	2402-000179	C-AL,SMD;47uF,20%,16V,GP,TP,6.6x6.6x5.4	1.000
PC8	2403-000189	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP	1.000
PC9	2403-000189	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	1.000
PIC1	1203-001473	IC-VOLTAGE REGULATOR;00AS,-,5P,-,PLASTIC	1.000
PIC5	1203-001473	IC-VOLTAGE REGULATOR;00AS,-,5P,-PLASTIC	1.000

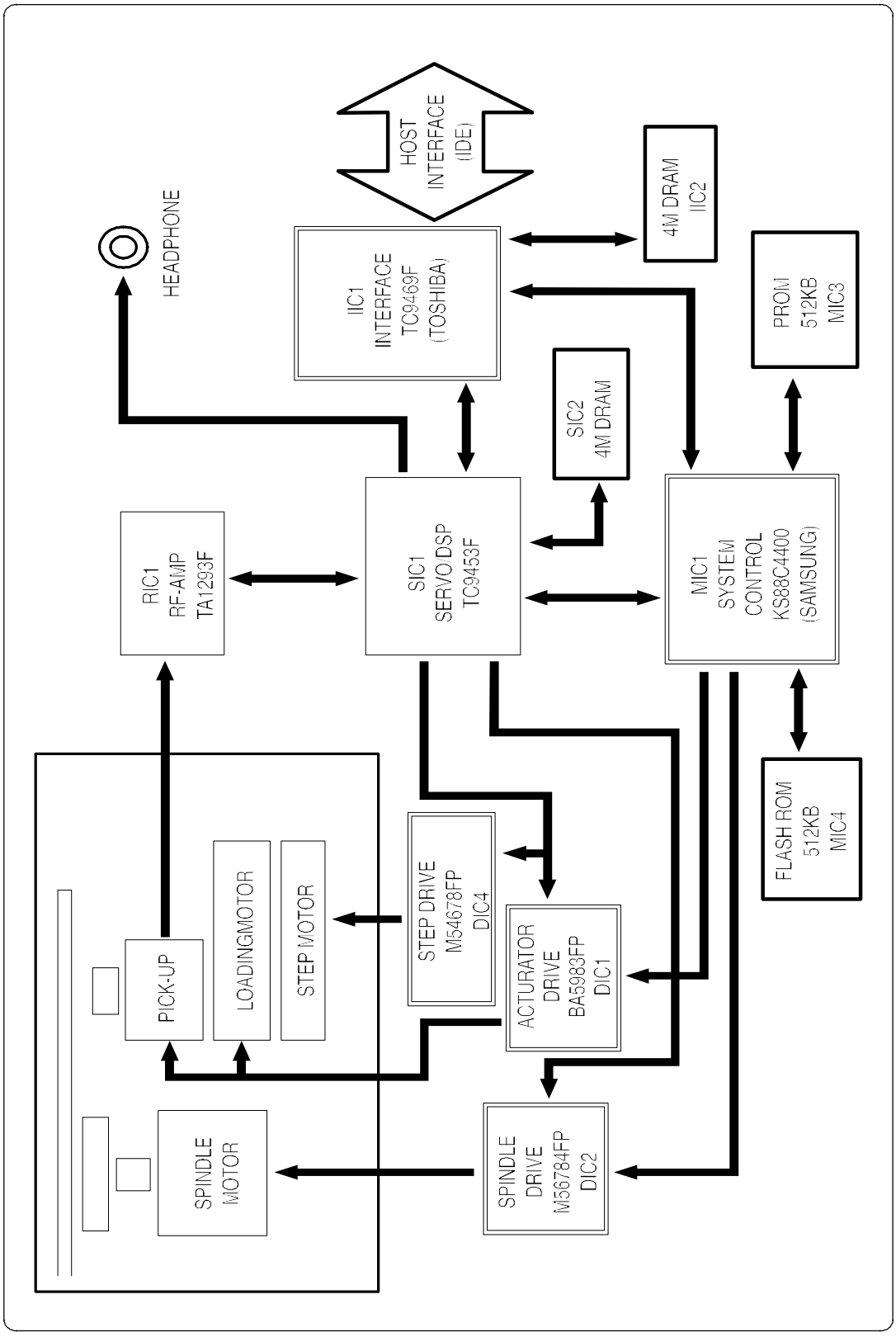
Loc.No	Part No	Description & Specfication	
PL1	3301-001082	CORE-FERRITE BEAD; AB, 3.2X2.5X1.3X0.5MM,-	1.000
PL2	3301-001082	CORE-FERRITE BEAD; AB, 3.2X2.5X1.3X0.5MM,-	1.000
PL3	3301-001082	CORE-FERRITE BEAD; AB, 3.2X2.5X1.3X0.5MM,-	1.000
PR1	2007-000701	R-CHIP; 3.6Kohm, 1%, 1/16W, DA, TP, 1608	1.000
PR12	2007-000090	R-CHIP; 10Kohm, 5%, 1/16W, DA, TP, 1608	1.000
PR13	2007-000090	R-CHIP; 10Kohm, 5%, 1/16W, DA, TP, 1608	1.000
PR2	2007-000669	R-CHIP; 2Kohm, 1%, 1/16W, DA, TP, 1608	1.000
PR3	2007-000087	R-CHIP; 0ohm, 5%, 1/16W, DA, TP, 1608	1.000
PR5	2007-000087	R-CHIP; 6.8Kohm, 5%, 1/16W, DA, TP, 1608	1.000
PR6	2007-000123	R-CHIP; 2.2Kohm, 5%, 1/16W, DA, TP, 1608	1.000
RC1	2404-000304	C-TA, CHIP;22uF, 20%, 6.3V, -, TP, 3528, -	1.000
RC10	2203-000440	C-CERAMIC, CHIP;1nF, 10%, 50V, X7R, TP, 1608, -	1.000
RC11	2203-000440	C-CERAMIC, CHIP;1nF, 10%, 50V, X7R, TP, 1608, -	1.000
RC12	2203-000189	C-CERAMIC, CHIP;100nF, +80-20%, 25V, Y5V, TP,	1.000
RC13	2203-000189	C-CERAMIC, CHIP;100nF, +80-20%, 25V, Y5V, TP,	1.000
RC14	2404-001001	C-TA, CHIP;10uF, 10%, 6.3V, GP, TP, 3216, 3.2§®	1.000
RC15	2203-000189	C-CERAMIC, CHIP;100nF, +80-20%, 25V, Y5V, TP,	1.000
RC18	2203-000783	C-CERAMIC, CHIP;330pF, 5%, 50V, NPO, TP, 1608,	1.000
RC20	2203-000783	C-CERAMIC, CHIP;330pF, 5%, 50V, NPO, TP, 1608,	1.000
RC20A	2203-001656	C-CERAMIC, CHIP;470pF, 5%, 50V, CH, TP, 1608, 1	1.000
RC26	2203-000257	C-CERAMIC, CHIP;10nF, 10%, 50V, X7R, TP, 1608, -	1.000
RC27	2203-000257	C-CERAMIC, CHIP;10nF, 10%, 50V, X7R, TP, 1608, -	1.000
RC28	2203-000189	C-CERAMIC, CHIP;100nF, +80-20%, 25V, Y5V, TP,	1.000
RC3	2203-000189	C-CERAMIC, CHIP;100nF, +80-20%, 25V, Y5V, TP,	1.000
RC31	2203-000189	C-CERAMIC, CHIP;100nF, +80-20%, 25V, Y5V, TP,	1.000
RC32	2203-000189	C-CERAMIC, CHIP;100nF, +80-20%, 25V, Y5V, TP,	1.000
RC33	2203-000257	C-CERAMIC, CHIP;10nF, 10%, 50V, X7R, TP, 1608, -	1.000
RC36	2203-000189	C-CERAMIC, CHIP;100nF, +80-20%, 25V, Y5V, TP,	1.000
RC37	2404-001001	C-TA, CHIP;10uF, 10%, 6.3V, GP, TP, 3216, 3.2§®	1.000
RC38	2404-000304	C-TA, CHIP;22uF, 20%, 6.3V, -, TP, 3528, -	1.000
RC39	2203-000189	C-CERAMIC, CHIP;100nF, +80-20%, 25V, Y5V, TP,	1.000
RC4	2404-001001	C-TA, CHIP;10uF, 10%, 6.3V, GP, TP, 3216, 3.2§®	1.000
RC40	2203-000189	C-CERAMIC, CHIP;100nF, +80-20%, 25V, Y5V, TP,	1.000
RC41	2203-001052	C-CERAMIC, CHIP;560pF, 10%, 50V, X7R, TP, 1608	1.000
RC42	2203-000189	C-CERAMIC, CHIP;100nF, +80-20%, 25V, Y5V, TP,	1.000
RC43	2404-001001	C-TA, CHIP;10uF, 10%, 6.3V, GP, TP, 3216, 3.2§®	1.000
RC44	2203-000189	C-CERAMIC, CHIP;100nF, +80-20%, 25V, Y5V, TP,	1.000
RC45	2203-000189	C-CERAMIC, CHIP;100nF, +80-20%, 25V, Y5V, TP,	1.000
RC5	2404-000304	C-TA, CHIP;22uF, 20%, 6.3V, -, TP, 3528, -	1.000
RC6	2404-000304	C-TA, CHIP;22uF, 20%, 6.3V, -, TP, 3528, -	1.000

Loc.No	Part No	Description & Specfication	
RC7	2404-001001	C-TA, CHIP;10uF, 10%, 6.3V, GP, TP, 3216, 3.2§®	1.000
RC8	2203-000189	C-CERAMIC, CHIP;100nF, +80-20%, 25V, Y5V, TP,	1.000
RC9	2203-000189	C-CERAMIC, CHIP;100nF, +80-20%, 25V, Y5V, TP,	1.000
RD1	0407-000114	DIODE-ARRAY; DAN202K, 80V,100mA, CA2-3, SOT-	1.000
RD2	0407-000114	DIODE-ARRAY; DAN202K, 80V,100mA, CA2-3, SOT-	1.000
RIC1	BG13-10001A	IC-ASIC; -, TA1293F, QFP, 80P, RF IC	1.000
RIC2	1001-001003	IC-ANALOG SWITCH; 4S66, BILATERAL, SOP, 5P,1	1.000
RL1	2007-000127	INDUCTOR-SMD; 10UH, 5%, 2.5X3.2X2.2MM	1.000
RL2	2007-000127	INDUCTOR-SMD; 10UH, 5%, 2.5X3.2X2.2MM	1.000
RL3	2007-000127	INDUCTOR-SMD; 10UH, 5%, 2.5X3.2X2.2MM	1.000
RL4	3301-001082	CORE-FERRITE BEAD; AB, 3.2X2.5X1.3X0.5MM,-	1.000
RQ1	0501-000251	TR-SMALL SIGNAL; BC807, PNP, 310MW, SOT-23, T	1.000
RQ2	0501-000251	TR-SMALL SIGNAL; BC807, PNP, 310MW, SOT-23, T	1.000
RR1	2007-000081	R-CHIP; 2.7Kohm, 5%, 1/16W, DA, TP, 1608	1.000
RR10	2007-000090	R-CHIP; 10Kohm, 5%, 1/16W, DA, TP, 1608	1.000
RR15	2007-000070	R-CHIP; 0ohm, 5%, 1/16W, DA, TP, 1608	1.000
RR16	2007-000070	R-CHIP; 0ohm, 5%, 1/16W, DA, TP, 1608	1.000
RR18	2007-000070	R-CHIP; 0ohm, 5%, 1/16W, DA, TP, 1608	1.000
RR19	2007-000078	R-CHIP; 1Kohm, 5%, 1/16W, DA, TP, 1608	1.000
RR2	2007-000415	R-CHIP; 15ohm, 5%, 1/16W, DA, TP, 2012	1.000
RR20	2007-000078	R-CHIP; 1Kohm, 5%, 1/16W, DA, TP, 1608	1.000
RR21	2007-000415	R-CHIP; 15ohm, 5%, 1/16W, DA, TP, 2012	1.000
RR22	2007-000081	R-CHIP; 2.7Kohm, 5%, 1/16W, DA, TP, 1608	1.000
RR23	2007-000075	R-CHIP; 220ohm, 5%, 1/16W, DA, TP, 1608	1.000
RR32	2007-000074	R-CHIP; 100ohm, 5%, 1/16W, DA, TP, 1608	1.000
RR8	2007-000074	R-CHIP; 100ohm, 5%, 1/16W, DA, TP, 1608	1.000
		R-CHIP; 0ohm, 5%, 1/16W, DA, TP, 1608	1.000
RR9	2007-000070	R-CHIP; 1Kohm, 5%, 1/16W, DA, TP, 1608	1.000
RR9A	2007-000078	C-TA, CHIP;10uF, 10%, 6.3V, GP, TP, 3216, 3.2§®	1.000
SC1	2404-001001	C-CERAMIC, CHIP;100nF, +80-20%, 25V, Y5V, TP,	1.000
SC10	2203-000189	C-TA, CHIP;10uF, 10%, 6.3V, GP, TP, 3216, 3.2§®	1.000
SC11	2404-001001		
		C-CERAMIC, CHIP;100nF, +80-20%, 25V, Y5V, TP,	1.000
SC12	2203-000189	C-TA, CHIP;10uF, 10%, 6.3V, GP, TP, 3216, 3.2§®	1.000
SC13	2404-001001	C-TA, CHIP;10uF, 10%, 6.3V, GP, TP, 3216, 3.2§®	1.000
SC16	2404-000259	C-CERAMIC, CHIP;100nF, +80-20%, 25V, Y5V, TP,	1.000
SC19	2203-000041	C-CERAMIC, CHIP;100nF, +80-20%, 25V, Y5V, TP,	1.000
SC2	2203-000189		
		C-CERAMIC, CHIP;10pF, 0.25pF, 50V, NPO, TP, 16	1.000
SC20	2203-000041	C-CERAMIC, CHIP;4.7nF, 10%, 50V, X7R, TP, 1608	1.000
SC21	2203-000888	C-CERAMIC, CHIP;6.8nF, 10%, 50V, X7R, TP, 1608	1.000
SC23	2203-001103	C-TA, CHIP;22uF, 20%, 6.3V, -, TP, 3528, -	1.000
SC24	2404-000304	C-CERAMIC, CHIP;330nF, +80-20%, 16V, Y5V, TP,	1.000
SC25	2203-001630		

Loc.No	Part No	Description & Specfication	
SC26	2203-000236	C-CERAMIC,CHIP;100pF,5%,50V,NPO,TP,1608,	1.000
SC26A	2203-000189	C-CERAMIC,CHIP;100pF,+80-20%,25V,Y5V,TP,	1.000
SC28	2203-005105	C-CERAMIC,CHIP;680pF,5%,50V,CH ,TP,1608,1	1.000
SC3	2404-001001	C-TA,CHIP;10uF,10%,6.3V,GP,TP,3216,3.2§®	1.000
SC30	2203-001052	C-CERAMIC,CHIP;560pF,10%,50V,X7R,TP,1608,	1.000
SC31	2203-001052	C-CERAMIC,CHIP;560pF,10%,50V,X7R,TP,1608,	1.000
SC32	2203-000189	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	1.000
SC33	2203-000783	C-CERAMIC,CHIP;330pF,5%,50V,NPO,TP,1608,	1.000
SC34	2203-000783	C-CERAMIC,CHIP;330pF,5%,50V,NPO,TP,1608,	1.000
SC35	2203-000189	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	1.000
SC36	2203-000189	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	1.000
SC37	2203-000189	C-CERAMIC,CHIP;100pF,+80-20%,25V,Y5V,TP,	1.000
SC38	2203-000189	C-CERAMIC,CHIP;100pF,+80-20%,25V,Y5V,TP,	1.000
SC39	2203-000189	C-CERAMIC,CHIP;100pF,+80-20%,25V,Y5V,TP,	1.000
SC4	2203-000384	C-CERAMIC,CHIP;15pF,5%,50V,NPO,TP,1608,-	1.000
SC40	2203-000189	C-CERAMIC,CHIP;100pF,+80-20%,25V,Y5V,TP,	1.000
SC41	2203-000189	C-CERAMIC,CHIP;100pF,+80-20%,25V,Y5V,TP,	1.000
SC42	2007-000070	C-CHIP;0ohm,5%,1/16W,DA,TP,1608	1.000
SC43	2203-000189	C-CERAMIC,CHIP;100pF,+80-20%,25V,Y5V,TP,	1.000
SC44	2404-001001	C-TA,CHIP;10uF,10%,6.3V,GP,TP,3216,3.2§®	1.000
SC45	2203-000491	C-CERAMIC,CHIP;2.2nF,10%,50V,X7R,TP,1608	1.000
SC4A	2203-000189	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP	1.000
SC5	2203-000384	C-CERAMIC,CHIP;15pF,5%,50V,NPO,TP,1608,-	1.000
SC6	2203-000372	C-CERAMIC,CHIP;15nF,10%,50V,X7R,TP,1608,	1.000
SC7	2203-000440	C-CERAMIC,CHIP;1nF,10%,50V,X7R,TP,1608,-	1.000
SC8	2203-000189	C-CERAMIC,CHIP;100pF,+80-20%,25V,Y5V,TP,	1.000
SC9	2404-001001	C-TA,CHIP;10uF,10%,6.3V,GP,TP,3216,3.2§®	1.000
SD1	0401-000008	DIODE-SWITCHING;DAN217,80V,100mA,200mW,4	1.000
SIC1	BG13-10001B	IC-ASIC;-,TC9453F,QFP,176P,SERVO/DATE	1.000
SIC2	1105-001135	IC-DRAM;416C254,256Kx16BIT,SOJ,40P,400	1.000
SIC3	0801-000305	IC-CMOS LOGIC;7SU04,INVERTER,SOP,SP,150M	1.000
SL2	2703-000127	INDUCTOR-SMD;10UH,5%,2.5X3.2X2.2MM	1.000
SQ1	0504-000128	TR-DIGITAL;NPN,200MW,22K-22KOHM,SOT-23	1.000
SR11	2007-000084	R-CHIP;4.7Kohm,5%,1/16W,DA,TP,1608	1.000
SR11A	2007-000070	R-CHIP;0ohm,5%,1/16W,DW,TP,1608	1.000
SR17	2007-000078	R-CHIP;1Kohm,5%,1/16W,DW,TP,1608	1.000
SR3	2007-000109	R-CHIP;1Mohm,5%,1/16W,DW,TP,1608	1.000
SR3A	2007-000109	R-CHIP;1Mohm,5%,1/16W,DW,TP,1608	1.000
SR41	2007-000097	R-CHIP;47Kohm,5%,1/16W,DW,TP,1608	1.000
SR44	2007-000097	R-CHIP;47Kohm,5%,1/16W,DW,TP,1608	1.000
SR45	2007-000097	R-CHIP;47Kohm,5%,1/16W,DW,TP,1608	1.000
SR46	2007-000090	R-CHIP;10Kohm,5%,1/16W,DW,TP,1608	1.000
SR47	2007-000458	R-CHIP;18Kohm,5%,1/16W,DW,TP,1608	1.000
SR48	2007-000090	R-CHIP;10Kohm,5%,1/16W,DW,TP,1608	1.000

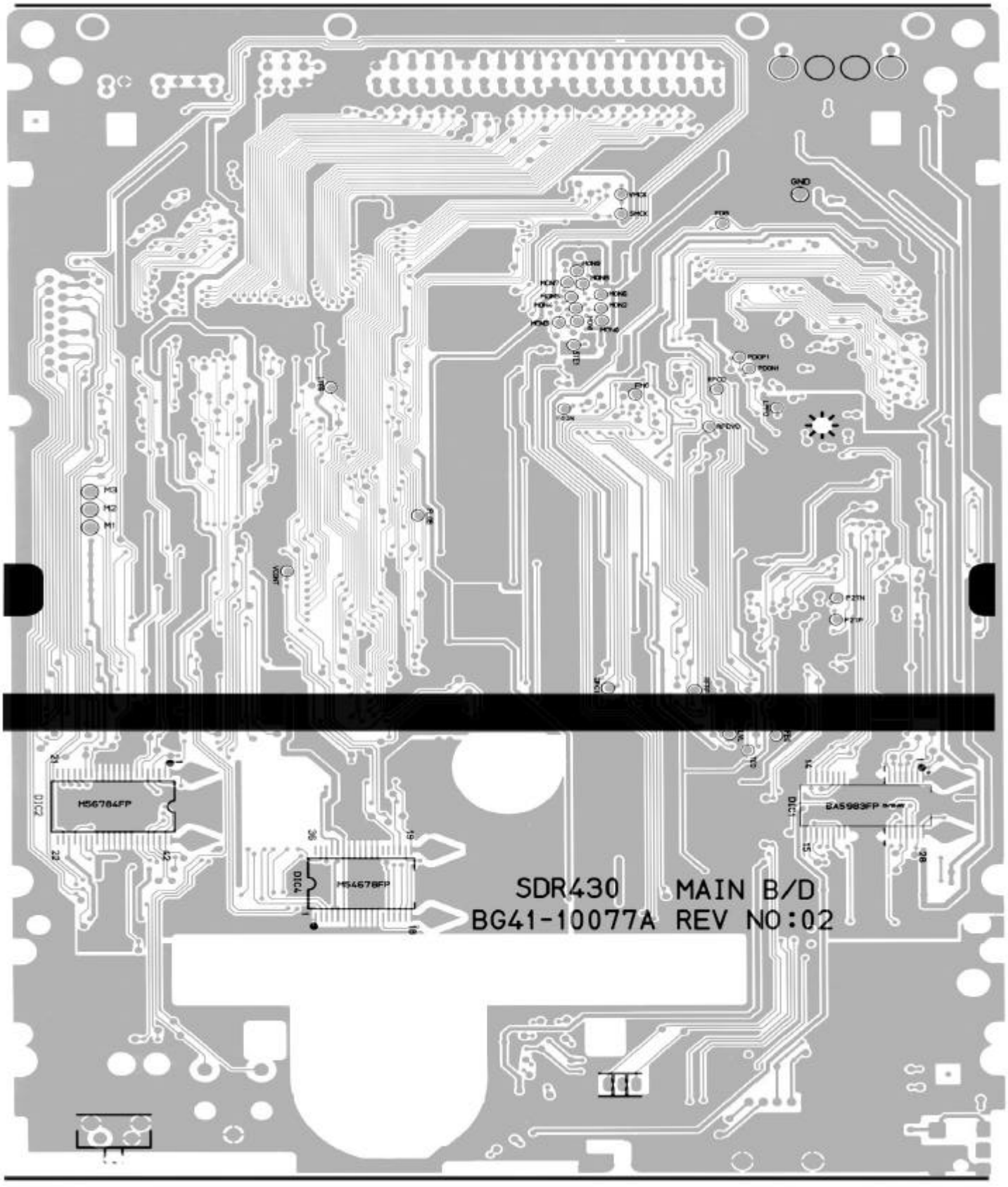
Loc.No	Part No	Description & Specfication	
SR49	2007-000097	R-CHIP;47Kohm,5%,1/16W,DA,TP,1608	1.000
SR50	2007-000124	R-CHIP;2.2Kohm,5%,1/16W,DA,TP,1608	1.000
SR51	2007-000106	R-CHIP;2.2Kohm,5%,1/16W,DA,TP,1608	1.000
SR56	2007-000043	R-CHIP;220Kohm,5%,1/16W,DA,TP,1608	1.000
SR57	2007-000736	R-CHIP;30Kohm,5%,1/16W,DA,TP,1608	1.000
SR58	2007-000669	R-CHIP;2Kohm,5%,1/16W,DA,TP,1608	1.000
SR59	2007-000066	R-CHIP;20Kohm,5%,1/16W,DA,TP,1608	1.000
SR6	2007-000107	R-CHIP;470Kohm,5%,1/16W,DA,TP,1608	1.000
SR61	2007-000090	R-CHIP;10Kohm,5%,1/16W,DA,TP,1608	1.000
SR62	2007-000097	R-CHIP;47Kohm,5%,1/16W,DA,TP,1608	1.000
SR63	2007-000097	R-CHIP;47Kohm,5%,1/16W,DA,TP,1608	1.000
SR65	2007-000074	R-CHIP;100ohm,5%,1/16W,DA,TP,1608	1.000
SR66	2007-000090	R-CHIP;10Kohm,5%,1/16W,DA,TP,1608	1.000
SR67	2007-000090	R-CHIP;10Kohm,5%,1/16W,DA,TP,1608	1.000
SR68	2007-000090	R-CHIP;10Kohm,5%,1/16W,DA,TP,1608	1.000
SR69	2007-000090	R-CHIP;10Kohm,5%,1/16W,DA,TP,1608	1.000
SR7	2007-000094	R-CHIP;22Kohm,5%,1/16W,DA,TP,1608	1.000
SR70	2007-000094	R-CHIP;22Kohm,5%,1/16W,DA,TP,1608	1.000
SR71	2007-000090	R-CHIP;10Kohm,5%,1/16W,DA,TP,1608	1.000
SR72	2007-000090	R-CHIP;10Kohm,5%,1/16W,DA,TP,1608	1.000
SR73	2007-000090	R-CHIP;10Kohm,5%,1/16W,DA,TP,1608	1.000
SR74	2007-000090	R-CHIP;10Kohm,5%,1/16W,DA,TP,1608	1.000
SR75	2007-000090	R-CHIP;10Kohm,5%,1/16W,DA,TP,1608	1.000
SR76	2007-000090	R-CHIP;10Kohm,5%,1/16W,DA,TP,1608	1.000
SR77	2007-000090	R-CHIP;10Kohm,5%,1/16W,DA,TP,1608	1.000
SR78	2007-000082	R-CHIP;3.3Kohm,5%,1/16W,DA,TP,1608	1.000
SR79	2007-000094	R-CHIP;22Kohm,5%,1/16W,DA,TP,1608	1.000
SR8	2007-000084	R-CHIP;4.7Kohm,5%,1/16W,DA,TP,1608	1.000
SR80	2007-000134	R-CHIP;33Kohm,5%,1/16W,DA,TP,1608	1.000
SR81	2007-000090	R-CHIP;10Kohm,5%,1/16W,DA,TP,1608	1.000
SR84	2007-000084	R-CHIP;4.7Kohm,5%,1/16W,DA,TP,1608	1.000
SR85	2007-000084	R-CHIP;4.7Kohm,5%,1/16W,DA,TP,1608	1.000
SVR1	2104-000001	VR-SMD;1KOHM,25%,0.15W,TOP/BOTTON	1.000
SX1	2801-003687	R-CHIP;47Kohm,5%,1/16W,DA,TP,1608	1.000
	BG99-000107	ASSY-MAIN PCB,m;SDR-430/DOM,ASS'Y MAIN P	1.000
	0202-001086	SOLDER-WIRE.;S63-R20,-,360X20x8,63SN/37P	1.000
	0202-001087	SOLDER-WIRE FLUX;KR19,S60A,D1.2,63SN/37P	1.000
	0204-000203	ISOPROPYL ALCOHOL;-,C2H50H,99%,-	1.000
	0204-001103	FLUX;SV95-1F,-,99.937,-	1.000
AJACK1	3722-000107	JACK-DC POWER;1P,3.6MM,SN,BLK,NO	1.000
AVR1	2101-001004	VR-ROTARY;20Kohm,30%,0.03E,TOP	1.000
CN1	3710-000001	CONNECTOR-SHUNT;2P,1R,2.54§®,-,-SN	1.000
CN1	3711-003262	CONNECTOR-HEADER;BOX,56P,2R,2.54MM/5.08M	1.000
CN3	3708-001254	CONNECTOR-FPC/FC/PIC;17P,1§®,STRAIGHT,SN	1.000
CN4	3711-000906	CONNECTOR-HEADER;BOX,56P,2R,2.54MM/5.08M	1.000
MIC3	1102-001024	IC-EPROM;27C512,64Kx8BIT,PLCC,32P,-,90n	1.000
MSW1	BG34-22001A	SWITCH;DC5V,-,100,5.7§®,40g,2.6+-0.5m	1.000
MSW2	3404-001030	SWITCH-TACT;12V,50MA,100¡¾30GF,7.1X7.0X1	1.000

8.Block diagram

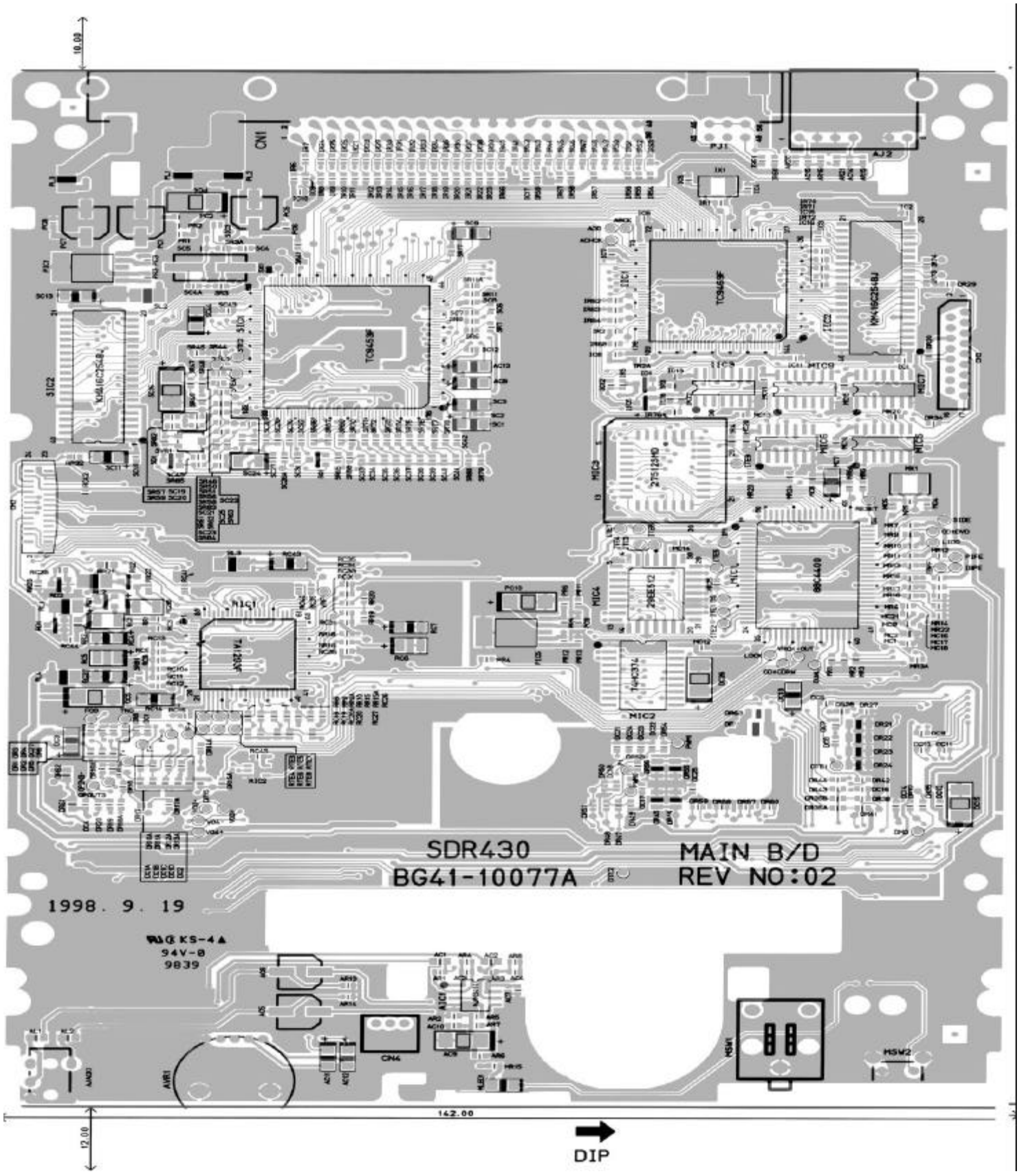


9. MAIN board

Operational position diagram



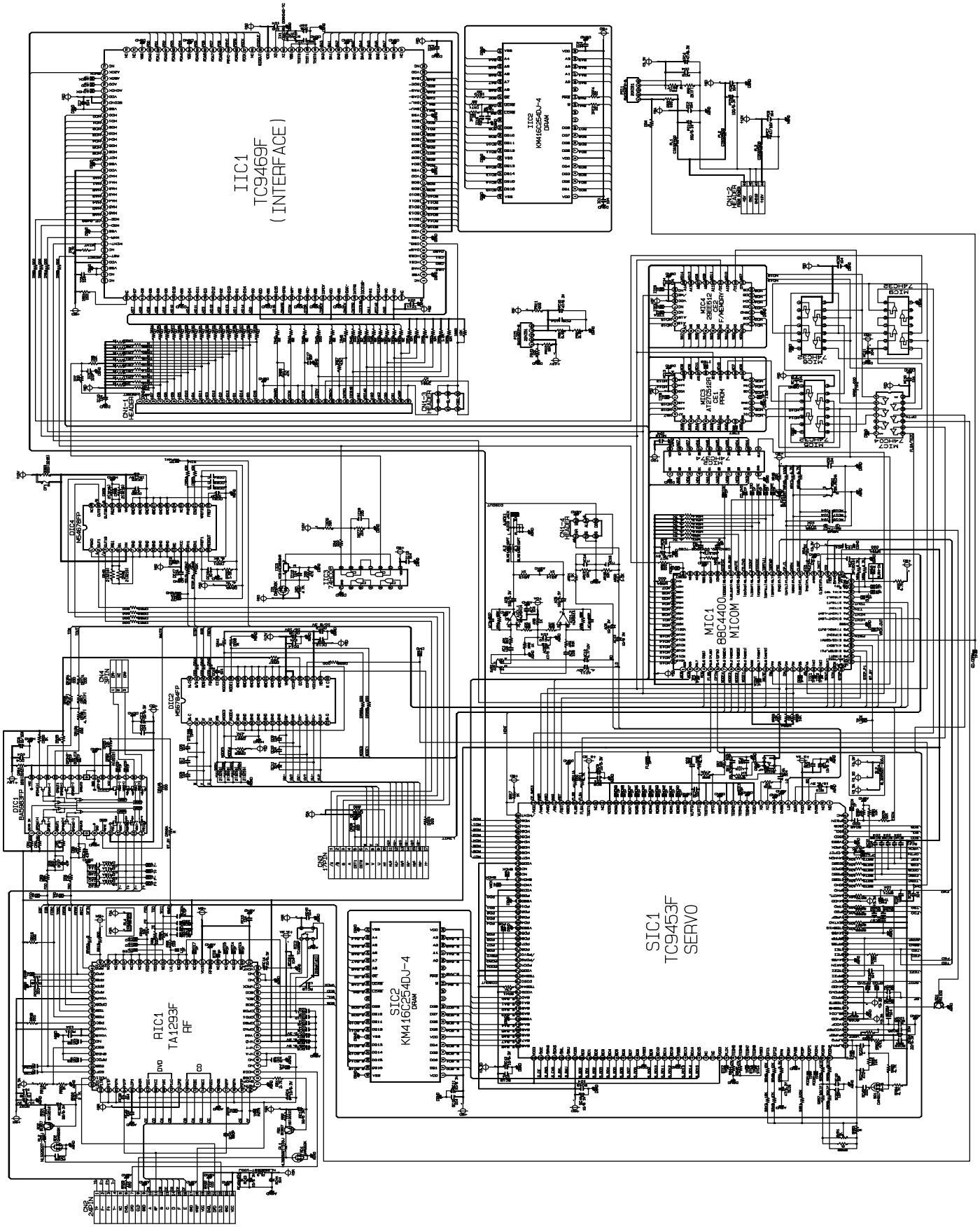
Operational position diagram



10. Schematic diagram

10-1 DRIVE PART ---------- 10-2

10 - 1 DRIVE PART



9/25